



## Volume 1

Executive Summary  
Chapters 1 - 8

# DRAFT ENVIRONMENTAL ASSESSMENT November 1998

Finance Docket No. 33558  
Canadian National Railway Company,  
Grand Trunk Corporation, and  
Grand Trunk Western Railroad Incorporated  
--Control--  
Illinois Central Corporation,  
Illinois Central Railroad Company,  
Chicago, Central & Pacific Railroad Company,  
and Cedar River Railroad Company

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**SURFACE TRANSPORTATION BOARD**  
**Washington, DC 20423**

**Section of Environmental Analysis**

**November 9, 1998**

**Re: Railroad Control Application, Finance Docket No. 33556 — Canadian National  
— Control — Illinois Central: Release of Draft Environmental Assessment for  
Public Review and Comment**

**To: Interested Parties**

The Section of Environmental Analysis (SEA) is pleased to provide you with the enclosed Draft Environmental Assessment (Draft EA) on the proposed Acquisition of Illinois Central Corporation (IC) by Canadian National Railway Company (CN). The Draft EA discusses the potential environmental impacts that could result from the proposed CN/IC Acquisition and includes SEA's preliminary recommendations for mitigating possible environmental effects.

The Draft EA reflects SEA's independent analysis and incorporates input from Federal, state and local agencies. SEA welcomes comments on the Draft EA regarding the potential environmental effects directly related to the proposed Acquisition, as well as possible mitigation measures to address adverse environmental impacts. In addition, the Draft EA includes a Safety Integration Plan, prepared by CN and IC, which explains how they propose to safely integrate their separate operations if the Board approves the proposed Acquisition. All interested agencies, organizations, and individuals are encouraged to comment on the Draft EA by submitting written comments (include an original plus 10 copies) to the address listed below by December 11, 1998, the close of the public comment period.

SEA will consider all comments received on the Draft EA, conduct additional environmental analysis as appropriate, and consult with appropriate public agencies and interested parties in preparing the Final Environmental Assessment (Final EA). SEA will issue the Final EA prior to the Board's Oral Argument and Voting Conference, which are currently scheduled for March 22, 1999 and March 29, 1999, respectively. In making its final decision, the Board will consider the entire environmental record, including all public comments; the Draft EA; and the Final EA, including SEA's environmental mitigation recommendations. The Board plans to issue its final written decision on the proposed Acquisition on May 25, 1999. Any party may file an administrative appeal within 20 days of the Board's final written decision.

Please submit comments by December 11, 1998 to the following address:

Address: Office of the Secretary  
Case Control Unit  
Finance Docket No. 33556  
Surface Transportation Board  
1925 K Street, N.W.  
Washington, DC 20423-0001

Attn: Elaine K. Kaiser  
Environmental Project Director  
Environmental Filing

For further information on the proposed CN/IC Acquisition, interested parties may call SEA's toll-free Environmental Hotline at 1-888-869-1997 (TDD for the hearing impaired: (202) 565-1695), or access SEA's website for the proposed CN/IC Acquisition at <http://www.cnicacquisition.com>. For additional information regarding environmental issues or the environmental review process, you may contact SEA's Project Manager for the proposed CN/IC Acquisition, Michael Dalton, at (202)565-1530.

Thank you for your interest and participation in the environmental review process.

Sincerely,



Elaine K. Kaiser  
Environmental Project Director  
Section of Environmental Analysis

## **SURFACE TRANSPORTATION BOARD**

**Finance Docket No. 33556**

**Canadian National Railway Company, Grand Trunk Corporation, and  
Grand Trunk Western Railroad Incorporated**

**—Control—**

**Illinois Central Corporation; Illinois Central Railroad Company;  
Chicago, Central & Pacific Railroad Company; and Cedar River Railroad Company**

### **GUIDE TO THE DRAFT ENVIRONMENTAL ASSESSMENT**

This Draft Environmental Assessment (Draft EA) evaluates the potential environmental impacts that could result from the proposed Acquisition of Illinois Central Corporation, Illinois Central Railroad Company, Chicago, Central & Pacific Railroad Company, and Cedar River Railroad Company (IC) by Canadian National Railway Company and Grand Trunk Corporation (together with its affiliates [CN]). The Surface Transportation Board (Board), Section of Environmental Analysis (SEA) has prepared this document in accordance with the requirements of the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321); the Council on Environmental Quality (CEQ) regulations implementing NEPA; the Board's environmental rules (49 CFR Part 1105); and other applicable environmental statutes and regulations.

To assist the reader in the review of this document, each volume contains a Guide to that volume. In addition, each individual volume also contains a Guide to the Draft EA, a Glossary of Terms, a List of Acronyms and Abbreviations, and the Table of Contents of the Draft EA. Specifically, the Draft EA document includes the following volumes:

#### **Volume 1: The Executive Summary and Chapters 1 through 3**

- The Executive Summary provides an overview of the proposed CN/IC Acquisition, including the potential significant environmental impacts.
- Chapter 1, "Introduction and Background," describes the purpose and need for the project, the proposed action, and the alternatives to the proposed action. It also sets forth the jurisdiction of the Board and outlines SEA's environmental review process. In addition, this chapter presents an overview of SEA's agency coordination and the public comment process.
- Chapter 2, "Overview of Public Participation," describes SEA's public outreach activities to notify interested parties and potential environmental justice populations of

the anticipated environmental impacts of the proposed CN/IC Acquisition and of the availability of the Draft EA for public review and comment. Additionally, the chapter explains SEA's distribution of the Draft EA, explains the methods that SEA used to facilitate the public comment process, and describes the agency consultation that SEA performed as part of the environmental review process.

- **Chapter 3, "Project Description,"** identifies the proposed CN/IC Acquisition-related activities that SEA analyzed. This chapter includes a table presenting the thresholds SEA used to identify activities for environmental analysis and explains project activities.
- **Chapter 4, "Environmental Consequences—Operational Changes,"** presents the environmental analysis that SEA conducted to evaluate the potential environmental effects of changes in rail operations as a result of the proposed Acquisition. Specifically, Chapter 4 explains the methods of analysis, identifies the results of the analysis, and discusses SEA's assessment of potential environmental impacts. In addition, this chapter describes both the anticipated environmental benefits and the potential adverse environmental impacts of the proposed CN/IC Acquisition.
- **Chapter 5, "Environmental Consequences—Construction Projects,"** presents the environmental analysis that SEA conducted to evaluate the potential environmental effects of the Applicants' Acquisition-related construction projects.
- **Chapter 6, "Environmental Consequences—Cumulative Effects,"** presents the environmental analysis that SEA conducted to evaluate the cumulative potential environmental effects of operational changes, construction projects, and other related projects. Chapter 6 also presents SEA's methods of analysis, analysis results, and SEA's assessment of potential cumulative environmental impacts of the proposed CN/IC Acquisition.
- **Chapter 7, "Safety Integration Plan,"** sets forth the purpose and issues addressed in the Applicants' Safety Integration Plan and includes the Board's decision requiring the Safety Integration Plan.
- **Chapter 8, "SEA's Preliminary Recommended Environmental Mitigation,"** presents SEA's preliminary environmental mitigation recommendations to the Board to address potential adverse environmental impacts.

The Draft EA also includes Appendices containing the detailed analysis conducted in each technical discipline and the results reached, including methods, extensive tables, and other pertinent data. Additional appendices contain public outreach and agency consultation information and documents, including public and agency correspondence, public outreach materials, responses from other railroads, verified statements, relevant Board decisions, Federal regulations, site visit summaries, and other pertinent information. The Final EA will include the public comments received on this Draft EA. The Appendices are organized as follows:

**Volume 2: Appendices A through L**

- Appendix A: List of Public Comments on the Proposed CN/IC Acquisition
- Appendix B: Rail Line Segments
- Appendix C: Safety Analysis Methods and Results
- Appendix D: Transportation Analysis Methods and Results
- Appendix E: Energy Analysis Methods and Results
- Appendix F: Air Quality Analysis Methods and Results
- Appendix G: Noise Analysis Methods and Results
- Appendix H: Cultural Resources Analysis Methods and Results
- Appendix I: Hazardous Materials Spill Sites and Hazardous Waste Sites Analysis Methods and Results
- Appendix J: Natural Resources Analysis Methods and Results
- Appendix K: Land Use Analysis Methods and Results
- Appendix L: Environmental Justice Analysis Methods and Results

**Volume 3: Appendices M through V**

- Appendix M: Cumulative Impacts Analysis—Backup Information
- Appendix N: Public Participation Materials
- Appendix O: Verified Statements
- Appendix P: Voluntary Railroad Mitigation Plans
- Appendix Q: Relevant Board Decisions
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- Appendix T: List of Agency Consultations and Relevant Correspondence

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## EXECUTIVE SUMMARY

The Surface Transportation Board, Section of Environmental Analysis prepared this Draft Environmental Assessment to identify and evaluate the potential environmental impacts of the Canadian National proposal to acquire Illinois Central.<sup>1</sup> In its evaluation, SEA identified potential environmental impacts in two environmental issue areas (hazardous materials transport and environmental justice) and has recommended mitigation measures to address these potential impacts.

SEA concludes that if the mitigation it recommends is imposed, the proposed CN/IC Acquisition would not have any significant adverse environmental impacts. SEA is issuing this Draft EA for public review and comment and will fully consider all comments it receives in preparing the Final EA. The Board will consider the entire environmental record, the Draft EA and Final EA, all public comments, and SEA's final environmental mitigation recommendations in making its final decision on the proposed CN/IC Acquisition.

CN and IC filed a joint Application, and Operating Plan with the Board on July 15, 1998. In their Application, CN sought authority to acquire IC. The Board will decide whether it will approve or disapprove the proposed CN/IC Acquisition at a voting conference scheduled for March 29, 1999. If the Board decides to approve the proposed Acquisition, the Board may also impose specific conditions and mitigation requirements, including environmental mitigation conditions. In this Draft EA, SEA analyzed the potential environmental effects of two alternatives: the "No-Action Alternative," under which the Board would not approve the proposed Acquisition, and the "Approval Alternative," under which the Board would approve the proposed Acquisition with or without conditions. The Board intends to issue its final written decision on the proposed CN/IC Acquisition on May 25, 1999. In that decision, the Board will address environmental, economic, and competitive transportation issues and impose, if approved, any conditions it deems appropriate, including environmental conditions.

During its environmental review process, SEA considered a broad range of environmental issues that could affect communities on a general (or system-wide), regional, and local level. This approach allowed SEA to identify and assess potential environmental impacts and develop reasonable preliminary environmental mitigation measures to address potential significant adverse impacts.

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<sup>1</sup> The "Surface Transportation Board" is hereinafter referred to as "the Board"; "Section of Environmental Analysis" is hereinafter referred to as "SEA"; and the "Draft Environmental Assessment" is hereinafter referred to as the "Draft EA." "CN" stands for "Canadian National Railway Company and its subsidiaries"; "IC" stands for "Illinois Central Corporation and its subsidiaries."

In conducting its environmental analysis, SEA first applied the Board's thresholds for environmental analysis from the Code of Federal Regulations (CFR) at 49 CFR Part 1105. The Board's thresholds apply specifically to air quality and noise. For issue areas where the Board does not have specific thresholds for environmental analysis, SEA assessed whether it would be appropriate to apply thresholds developed for the recent Conrail Acquisition in this case.<sup>2</sup> SEA concluded that the analysis thresholds developed for the Conrail Acquisition were also appropriate for environmental analyses associated with the proposed CN/IC Acquisition.

## **PURPOSE AND NEED FOR THE PROPOSED CN/IC ACQUISITION**

CN and IC state that combining their operations would create single-line service to allow greater coordination and efficiency. The Applicants also state that the proposed Acquisition responds directly to shippers' needs for an improved rail infrastructure to handle the rapidly growing north-south trade flows stimulated by the North American Free Trade Agreement.

## **DESCRIPTION OF THE PROPOSED ACTION**

The proposed action consists of the Primary Application, including the Operating Plan and Errata to the Application, which the Applicants submitted to the Board, and any Settlement Agreements (agreements between the Applicants and other parties regarding competitive issues).

The proposed CN/IC Acquisition is an end-to-end coupling of the existing CN and IC systems. While the resulting CN/IC system would cover approximately 18,670 miles, only approximately 4,520 miles would be in the United States, and thus part of SEA's environmental review. The new system would be "Y-shaped" with its hub in Harvey, Illinois south of Chicago. The Applicants anticipate relatively minor changes in operations as a result of the proposed Acquisition. Their Operating Plan states that none of the Applicants' proposed increases in rail activity on rail line segments would exceed eight trains per day, which is the Board's threshold for environmental analysis for some of the issue areas the Board considers in conducting its environmental review. The Applicants have proposed no rail line abandonments and only five minor construction projects (one rail line connection and four rail yard bypass tracks). SEA identified 11 rail line segments, five rail yards, and one intermodal facility that met the Board's thresholds for air quality or noise analysis in this case. These facilities are located in Illinois and Michigan.

CN currently serves the Canadian ports of Halifax, Montreal, Thunder Bay, Prince Rupert, and Vancouver, and the Chicago, Detroit, and Buffalo gateways to and from the United States. The current IC system runs south from Chicago to the Gulf of Mexico and west from Chicago to Iowa and Minnesota.

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<sup>2</sup> Surface Transportation Board, Section of Environmental Analysis. *Final Environmental Impact Statement, CSX Corporation and CSX Transportation, Inc., Norfolk Southern Corporation and Norfolk Southern Railway Company, Conrail Inc., and Consolidated Rail Corporation*, STB Finance Docket No. 33388, May 1998.

## **ALLIANCE AND ACCESS AGREEMENTS WITH KCSR**

CN and IC have entered into two agreements, a marketing Alliance (Alliance) and an Access Agreement, with The Kansas City Southern Railway Company (KCSR) that will increase the levels of rail activity along rail line segments and at rail yards following the proposed Acquisition. The Operating Plan that the Applicants submitted to the Board reflects these increases on the proposed CN/IC system, and SEA reviewed the potential environmental effects of these traffic changes.

CN, IC, and KCSR formally entered into a 15-year marketing alliance on April 15, 1998, to improve interline service among these three railroads and link freight rail services for through market development and expansion. The Alliance provides for coordination among the three railroads regarding sales and marketing, operations, fleets, and information systems. It offers shippers competitive access. The Applicants and KCSR have also agreed not to coordinate shipping service where any two of the railroads provide direct rail service. Although this Alliance is independent of the proposed CN/IC Acquisition, the Applicants have indicated that it will not be as beneficial to shippers or the railroads without the service improvements and efficiencies fostered by the proposed CN/IC Acquisition.

In addition to the Alliance, CN and KCSR entered into an Access Agreement on April 15, 1998, that would become effective upon Board approval of the proposed CN/IC Acquisition. The Access Agreement would grant certain haulage and trackage rights from CN/IC to KCSR, and it would provide for potential investment in joint facilities and long-term access to those facilities following development by a management group consisting of representatives of the three railroads. Specifically, CN would grant KCSR access and haulage rights from three chemical plants at Geismar, Louisiana (now served by IC) to Baton Rouge, Louisiana as well as from Baton Rouge to Jackson, Mississippi. The Applicants' Operating Plan includes traffic changes on CN and IC lines and facilities that would result from the Access Agreement; SEA's environmental analysis also considers those changes.

In its environmental review, SEA also considered the potential environmental impacts of three Inconsistent and Responsive Applications. (Inconsistent and Responsive Applications are proposals that parties other than the Applicants file with the Board to modify the Application.)

## **THE BOARD'S ENVIRONMENTAL REVIEW PROCESS**

The Board is an independent Federal regulatory agency with jurisdiction over certain surface transportation matters, including railroad acquisitions and mergers. When the Board determines, based on a transaction's economic and competitive merits, that it is consistent with the public interest, the Board is required by statute to approve and authorize the proposed acquisition.

As a licensing action, the Board's decision is a Federal action requiring environmental review under the National Environmental Policy Act (NEPA) and the regulations of the Council on Environmental Quality (CEQ). SEA is responsible for conducting the environmental review on

behalf of the Board, evaluating the significance of potential environmental impacts, and making final environmental mitigation recommendations to the Board.

In imposing environmental mitigation conditions, the Board has consistently focused on the potential environmental impacts that would result directly from Acquisition-related changes in activity levels on existing rail lines and at rail facilities. The Board's practice consistently has been to mitigate only those conditions that result directly from a proposed transaction. The Board typically does not require mitigation for pre-existing environmental conditions, such as impacts associated with current railroad operations.

As part of the environmental review process, in its Decision No. 6, the Board required the Applicants to file a detailed Safety Integration Plan (Plan). The Plan outlines how the Applicants would safely integrate the infrastructure, equipment, personnel, and operating practices of their two companies if the proposed CN/IC Acquisition is approved. SEA and the Federal Railroad Administration (FRA), the agency within U.S. Department of Transportation (DOT) with responsibility over the enforcement of railroad safety regulations, have independently reviewed the Plan, and the Board and FRA have entered into a Memorandum of Understanding (MOU) regarding the ongoing safety integration process for this case. SEA encourages the public to review and comment on the Plan. SEA's discussion of the Safety Integration Plan appears in Chapter 7, "Safety Integration Plan," of this Draft EA. A copy of the Applicants' Plan, FRA's comments on it, and the MOU appears as Appendix V, "Safety Integration Plan," of this Draft EA.

## **DRAFT ENVIRONMENTAL ASSESSMENT PROCESS**

In performing its environmental analysis, SEA reviewed the Applicants' Application, Operating Plan, and Errata to the Application to identify projected changes in rail traffic on rail line segments and activity at rail yards and intermodal facilities that could cause potential environmental impacts. Before submitting their Application, the Applicants requested that the Board modify its environmental process from previous railroad acquisitions. Instead of submitting an Environmental Report assessing potential environmental impacts, as applicants have done in some previous merger cases, the Applicants sought permission to submit a Preliminary Draft Environmental Assessment (PDEA) to SEA. In Decision No. 5, the Board granted the Applicants request and directed the Applicants to prepare a PDEA under SEA's guidance. SEA reviewed and verified all the information in the PDEA and prepared this Draft EA with its third-party contractor using appropriate information and analysis from the PDEA. SEA also developed the preliminary recommended environmental mitigation in this Draft EA.

## **SUMMARY OF ENVIRONMENTAL IMPACTS AND SEA'S RECOMMENDED MITIGATION**

SEA carefully assessed the extent and potential significance of environmental effects related to the proposed CN/IC Acquisition. Overall, SEA identified only a small number of rail line segments that would experience an increase in activity warranting environmental review. Based on its analysis, SEA developed a set of preliminary recommended mitigation measures to address the potential significant adverse effects discovered during the course of its environmental



review. During its environmental review, SEA identified potential significant impacts in only two areas: hazardous materials transport and environmental justice.

SEA's preliminary recommended mitigation is consistent with the Board's practice of mitigating only those environmental impacts that directly result from the proposed action. SEA believes that it has developed comprehensive, reasonable, and practical preliminary environmental mitigation recommendations that would address the potential significant, adverse environmental impacts associated with the proposed CN/IC Acquisition.

In its environmental review of the proposed CN/IC Acquisition, SEA evaluated the following environmental issue areas:

- Freight Rail Operations Safety.
- Hazardous Materials Transport Safety.
- Passenger Rail Safety.
- Highway/Rail At-grade Crossing Emergency Vehicle Response.
- Highway/Rail At-grade Crossing Safety.
- Highway/Rail At-grade Crossing Delay.
- Traffic and Roadway Systems.
- Passenger Rail Operations Capacity.
- Navigation.
- Energy.
- Air Quality.
- Noise.
- Cultural Resources.
- Hazardous Wastes Sites.
- Land Use.
- Natural Resources.
- Environmental Justice.
- Cumulative Effects.

In its environmental review, SEA determined that the proposed CN/IC Acquisition would have positive effects on the environment. These benefits would occur on a system-wide basis, primarily through increased efficiency on existing routes that the proposed CN/IC Acquisition would facilitate. These potential benefits include reductions in fuel consumption, air pollutant emissions, highway traffic, and highway accidents.

As previously stated, SEA identified two areas with the potential for significant environmental impacts: hazardous materials transport and environmental justice. In its evaluation of hazardous materials transport, SEA determined that without mitigation, increases in transport of hazardous materials could have a significant adverse effect along 14 rail line segments. However, SEA's preliminary recommended mitigation would address the potential environmental impacts from increased hazardous materials transport along those routes. These mitigation measures include requiring the Applicants to follow certain procedures in handling hazardous materials, and to coordinate with local emergency responders. SEA concludes that if the Board imposes this

mitigation, the environmental effects from hazardous materials transport along these routes would not be significant.

In its evaluation of environmental effects on environmental justice populations, SEA identified potential disproportionately high and adverse impacts to minority and low-income populations in the communities of Cairo, Carbondale, Centralia, Mounds, and Du Quoin, Illinois. These impacts would result from the hazardous materials transport impacts which SEA identified in its environmental review. SEA recommends specific mitigation measures tailored to those communities in addition to the mitigation described above for hazardous materials transport. SEA believes that this mitigation would address any potential disproportionate environmental impacts on environmental justice populations. To prevent any potential for environmental impacts from construction projects, SEA is including compliance with construction best management practices in its recommendations. Based on SEA's review of the Applicants' Safety Integration Plan, SEA is also recommending that the Board impose conditions requiring the Applicants to comply with ongoing safety integration oversight by FRA and the Board.

SEA evaluated other environmental issue areas and determined that no potential exists for significant adverse impacts for these issue areas:

- Freight Rail Operations Safety.
- Passenger Rail Safety.
- Highway/Rail At-grade Crossing Emergency Vehicle Response.
- Highway/Rail At-grade Crossing Safety.
- Highway/Rail At-grade Crossing Delay.
- Traffic and Roadway Systems.
- Passenger Rail Operations Capacity.
- Navigation.
- Energy.
- Air Quality.
- Noise.
- Cultural Resources.
- Hazardous Wastes Sites.
- Land Use.
- Natural Resources.
- Cumulative Effects.

Therefore, SEA's preliminary conclusion is that no mitigation is required to address these issue areas.

#### **SEA'S PRELIMINARY CONCLUSION**

Based on its independent analysis of all the information available at this time, SEA concludes that the proposed Acquisition of IC by CN would not significantly affect the quality of the human environment if the recommended mitigation measures set forth in this document are implemented. Accordingly, SEA intends to recommend that the Board impose the mitigation

measures listed in Chapter 8, "SEA's Preliminary Recommended Mitigation," as conditions in any final decision approving the proposed Acquisition and related construction projects.

## **PUBLIC PARTICIPATION**

The Board's environmental review process includes consultation with other government agencies and involves the public throughout the environmental review process. As part of the environmental review process, SEA informed public agencies and the general public about the proposed Acquisition to encourage broad public participation. SEA mailed correspondence and informational materials to pertinent public agencies and potentially affected communities, published notices in the *Federal Register*, issued press releases, placed notices in newspapers delivered to potentially affected communities, sent public service announcements to radio stations, and widely distributed copies of this Draft EA for public review and comment.

SEA's purpose in conducting public involvement and agency consultation activities is to gain public and agency input on the Draft EA and the environmental review process so that SEA can assess public concerns and issues and determine whether additional environmental analysis and mitigation are necessary. Chapter 2, "Overview of Public Participation," provides a more detailed discussion of outreach activities.

SEA encourages the public to participate in the environmental review of the proposed CN/IC Acquisition by commenting on the Draft EA and/or the Applicants' Safety Integration Plan during the 30-day comment period, which ends on December 11, 1998. Comments may be submitted to the address below. The public may file comments on both the EA and Safety Integration Plan in one submittal.

When submitting comments, please provide one original and ten copies to:

Office of the Secretary  
Case Control Unit  
STB Finance Docket No. 33556  
Surface Transportation Board  
1925 K Street, NW  
Washington, DC 20423-0001

The following information should appear in the lower left-hand corner of the envelope:

Attention: Elaine K. Kaiser  
Environmental Project Director  
Environmental Filing

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## **CHAPTER 1**

### **INTRODUCTION AND BACKGROUND**

Chapter 1 describes the purpose of and need for the proposed Acquisition of Illinois Central by Canadian National.<sup>3</sup> It describes the environmental review process for the project and discusses SEA's role in conducting the environmental review. Chapter 1 also highlights the role of other Federal, state, and local agencies; parties of record; communities; and other interested parties.

On July 15, 1998, CN and IC (the Applicants) filed an application with the Board requesting authorization for CN to acquire control of IC. The Board complies with all Federal environmental rules that are applicable. Under the National Environmental Policy Act (NEPA) and the Board's environmental rules in the Code of Federal Regulations (CFR) at 49 CFR Part 1105, the Board is required to conduct and complete an environmental review of the proposed CN/IC Acquisition before it can issue a final decision. On August 14, 1998, the Board served Decision No. 6 on the Parties of Record in this proceeding, announcing the Board's intent to prepare an Environmental Assessment (EA). Appendix Q, "Relevant Board Decisions," contains a copy of Board Decision No. 6.

#### **1.1 PURPOSE OF AND NEED FOR THE PROPOSED CN/IC ACQUISITION**

The Applicants have stated that numerous benefits would result from combining the CN and IC systems. Overall, they maintain that the proposed CN/IC Acquisition would create new and improved train service, particularly between eastern Canada and the southern United States. The Applicants also have stated that the proposed CN/IC Acquisition responds directly to shippers' needs for improved rail infrastructure to handle the rapidly growing north-south trade flows stimulated by the North American Free Trade Agreement.

The Applicants stated that a number of benefits relate directly to the extended single-line service (service over one railroad, without rail car interchanges between railroads) proposed in their Operating Plan. These benefits include the following:

- Increased routing options for freight traffic.
- Improved coordination of freight movements.

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<sup>3</sup> "SEA" stands for the Surface Transportation Board's Section of Environmental Analysis. The Surface Transportation Board is hereafter referred to as "the Board." "IC" stands for "Illinois Central Corporation and its subsidiaries" and "CN" stands for "Canadian National Railway Company and its subsidiaries."

- Minimized car handling and improved train scheduling through improved blocking patterns.
- Faster and more reliable deliveries.
- Better utilization of car and locomotive equipment to reduce operating costs, maintenance, and delays.
- Safer service through improved blocking and train scheduling and by combining the best safety practices of each railroad.
- Intensified competition.
- Enhanced efficiency of rail operations.
- Opened marketing opportunities for shippers.

Figure 1-1, "Proposed CN/IC Rail System in the United States," is a map of the proposed combined system. See Chapter 3, "Project Description," for a detailed discussion of the proposed action.

## **1.2 ROLE OF THE SURFACE TRANSPORTATION BOARD**

This section describes the Board's role in regulating railroad matters.

### **1.2.1 The Surface Transportation Board**

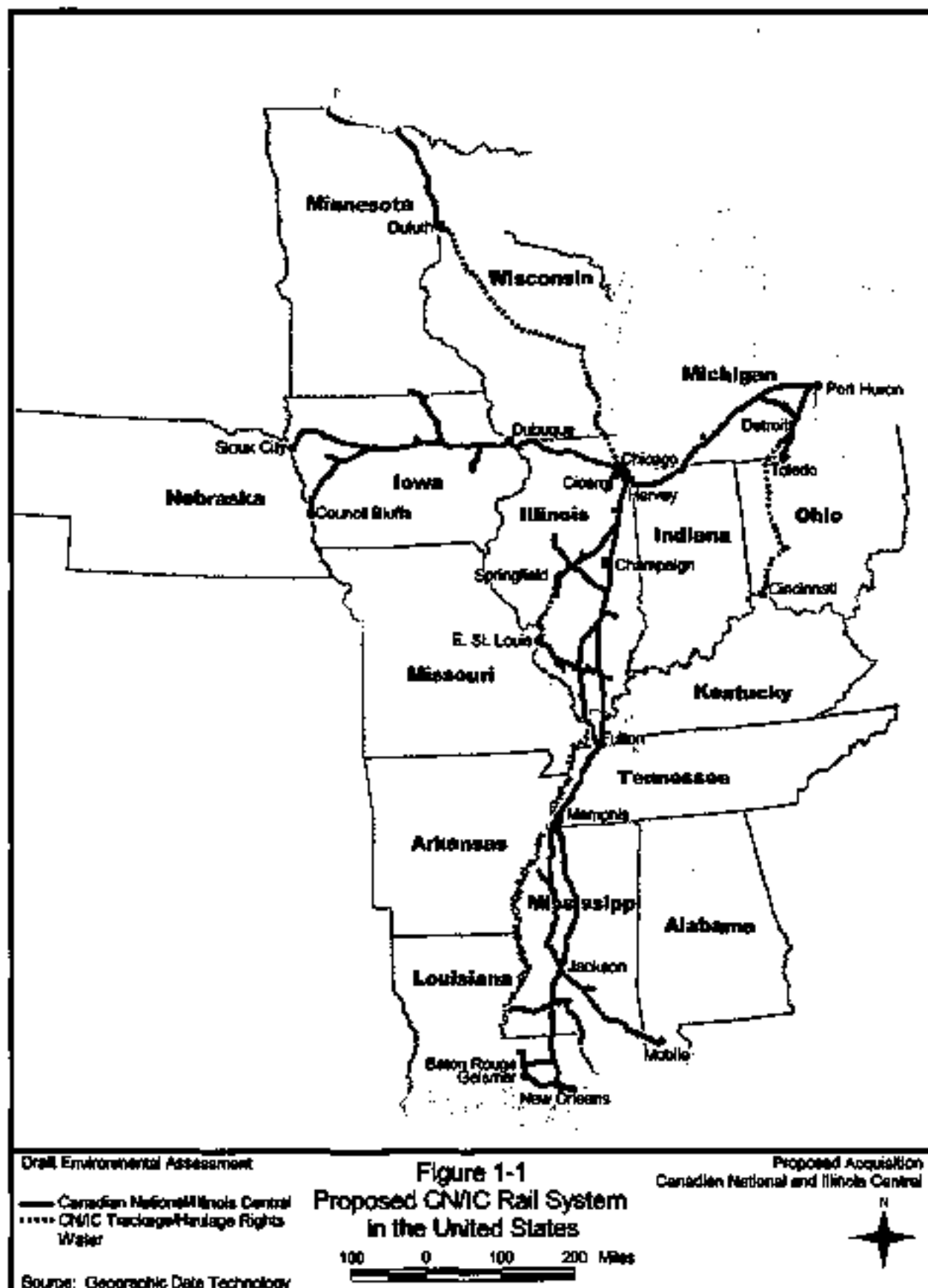
The Board is a nonpartisan, decisionally independent adjudicatory body, which is organizationally housed within the U.S. Department of Transportation (DOT). The Board has jurisdiction over certain rail transportation matters such as rail rates, financial transactions including railroad acquisitions and consolidations, rail constructions, and the abandonment of rail service.<sup>4</sup> The ICC Termination Act of 1995<sup>5</sup> established the Board to assume some of the rail regulatory functions that the former Interstate Commerce Commission (ICC) had administered. The Act either eliminated or transferred other ICC regulatory functions to other agencies. The Board's charge is to provide an efficient and effective forum for the resolution of disputes within its jurisdiction. In all of its decisions, the Board is committed to advancing the national transportation policy goals established by Congress.<sup>6</sup>

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<sup>4</sup> See 49 U.S.C. 10101 *et seq.*

<sup>5</sup> Pub. L. 104-88, 109 Stat. 803 (1995).

<sup>6</sup> See 49 U.S.C. 10101.



In 1920, Congress established a national policy favoring railroad consolidations in the interest of economy and efficiency. Congress reaffirmed its rail consolidation policy in subsequent amendments to the Interstate Commerce Act, and it requires the Board, as it required the ICC, to approve rail consolidation transactions that are in the public interest.<sup>7</sup> In determining the public interest, the Board's well-established and court-approved practice is to weigh the gains in operating efficiency and marketing capability realized through a particular railroad consolidation against any consequent reduction in competition.

The Board licenses railroads as common carriers, requiring them to accept goods and materials for transport from all customers upon reasonable request. If a railroad simply wants to upgrade a portion of its system or improve service to shippers, it may do so without seeking the Board's permission. The Board, therefore, has no control over the level of service. It does not regulate the number of trains operating over a specific section of rail line nor maintain control over general day-to-day railroad operations.

In the case of railroad mergers or acquisitions, a Board decision approving a transaction would not require the railroads involved to transport more freight or transport existing freight by any specific route. Rather, the Board's decision is intended to allow railroads to expand their rail line systems by acquiring facilities of other railroads and, thereby, operate more efficiently and compete more effectively with trucks and other railroads. Railroads make decisions on an ongoing basis regarding which routes they will use in response to changes in market conditions, the economy, and shipper demands.

The Board considers the economic, competitive, and potential environmental effects of a transaction in its review of proposed railroad mergers and acquisitions. The Board can approve a transaction as proposed; approve the transaction with conditions, including environmental conditions to offset or reduce the potential environmental impacts of the proposed action; or not approve the transaction.

### **1.2.2 Role of the Board in Reviewing Railroad Mergers and Acquisitions**

The Board reviews the economic, competitive, and environmental aspects of railroad mergers and acquisitions. The following sections describe the Board's review process.

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<sup>7</sup> See 49 U.S.C. 11324-25 (new), specifically 49 U.S.C. 11324(c).



### 1.2.2.1 Review Merits of the Proposed Action

Statutory provisions at 49 U.S.C. 11324 require the Board to consider the following when deciding whether to approve the merger of two or more Class I railroads<sup>a</sup> or impose conditions on such a transaction:

- The effect that the proposed transaction would have on providing adequate transportation to the public.
- The effect on the public interest of including or failing to include other rail carriers in the geographic area involved in the proposed transaction.
- The total fixed charges that would result from the proposed transaction.
- The interests of affected railroad employees.
- The possibility of an adverse impact on competition among railroads in the affected region or in the national rail system.

The Board has established a process for receiving pleadings and alternative proposals pertaining to the economic and competitive impacts of the proposed CN/IC Acquisition. This process is separate from the environmental review process, which provides specific opportunities for the public to learn about and comment on the potential environmental effects of the proposed CN/IC Acquisition. (See Table 1-1, "Board's Procedural and SEA's Environmental Review Schedule.")

### 1.2.2.2 Review Potential Environmental Effects of the Proposed Action

In conducting its environmental review, the Board considers the NEPA requirements and the implementing regulations of the Council on Environmental Quality (CEQ); other related environmental laws and their implementing regulations; and the former ICC environmental regulations at 49 CFR 1105, which the Board has adopted. The Board's environmental regulations govern SEA's environmental review process and outline SEA's procedures for preparing environmental documents.

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<sup>a</sup> As defined by the Board, Class I railroads as those having annual operating revenues of \$255.9 million or more after applying the railroad revenue deflator found in Note A to General Instructions, Item 1-1, in 49 CFR Part 1201.

**TABLE 1-1**  
**BOARD'S PROCEDURAL AND SEA'S ENVIRONMENTAL REVIEW SCHEDULE**

Day	Action	Date
	Applicants filed Notice of Intent to file Application.	February 12, 1998
Day 0	Applicants filed Application and Operating Plan.	July 15, 1998
	Board served Decision No. 6 with Procedural Schedule.	August 14, 1998
Day 30	The Board published Notice of Acceptance of Primary Application and Related Application in the Federal Register.	August 14, 1998
Day 30	Applicants filed Safety Integration Plan.	August 14, 1998
Day 47	Other parties filed summary descriptions of Inconsistent and Responsive Applications.	August 31, 1998
	Board published FR Notice of Environmental Review Schedule.	September 14, 1998
	Applicants filed Errata to Application and Operating Plan.	September 16, 1998
	Applicants filed revised Safety Integration Plan.	September 18, 1998
Day 68	Other parties filed Responsive Environmental Reports and Verified Statements for any Inconsistent and Responsive Applications.	September 21, 1998
	Board served Decision No. 11 with revised Procedural Schedule.	October 2, 1998
Day 104	Other parties filed Inconsistent and Responsive Applications and Requests for Conditions.	October 27, 1998
	The Board served Draft EA <sup>2</sup> on Parties of Record; SEA issues Draft EA to the public.	November 9, 1998
	The Board placed a notice in the Federal Register announcing the availability of the Draft EA and initiating a 30-day comment period on the Draft EA.	November 9, 1998
Day 125	The Board will publish Notice of Acceptance of Inconsistent and Responsive Applications if required in the Federal Register.	November 17, 1998
Day 135	The parties file responses to the Inconsistent and Responsive Applications, Requests for Conditions, and rebuttals in support of Primary Application.	November 27, 1998
	Public comments on Draft EA due.	December 11, 1998
Day 180	Other parties submit rebuttals in support of Inconsistent and Responsive Applications.	January 11, 1999
	SEA will issue Final EA.	February 1999
	Parties will file briefs.	February 19, 1999
Day 250	The Board will conduct oral arguments.	March 22, 1999
Day 257	The Board will conduct Voting Conference.	March 29, 1999
Day 314	The Board will issue final written decision.	May 25, 1999
Day 334	Deadline for filing Administrative Appeals.	June 14, 1999

<sup>2</sup> Draft EA: Draft Environmental Assessment.

### 1.2.2.3 Role of SEA and its Independent Third-Party Contractors

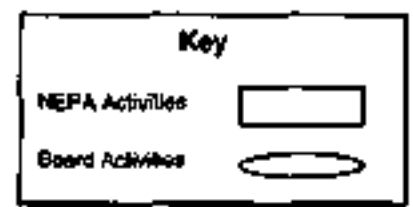
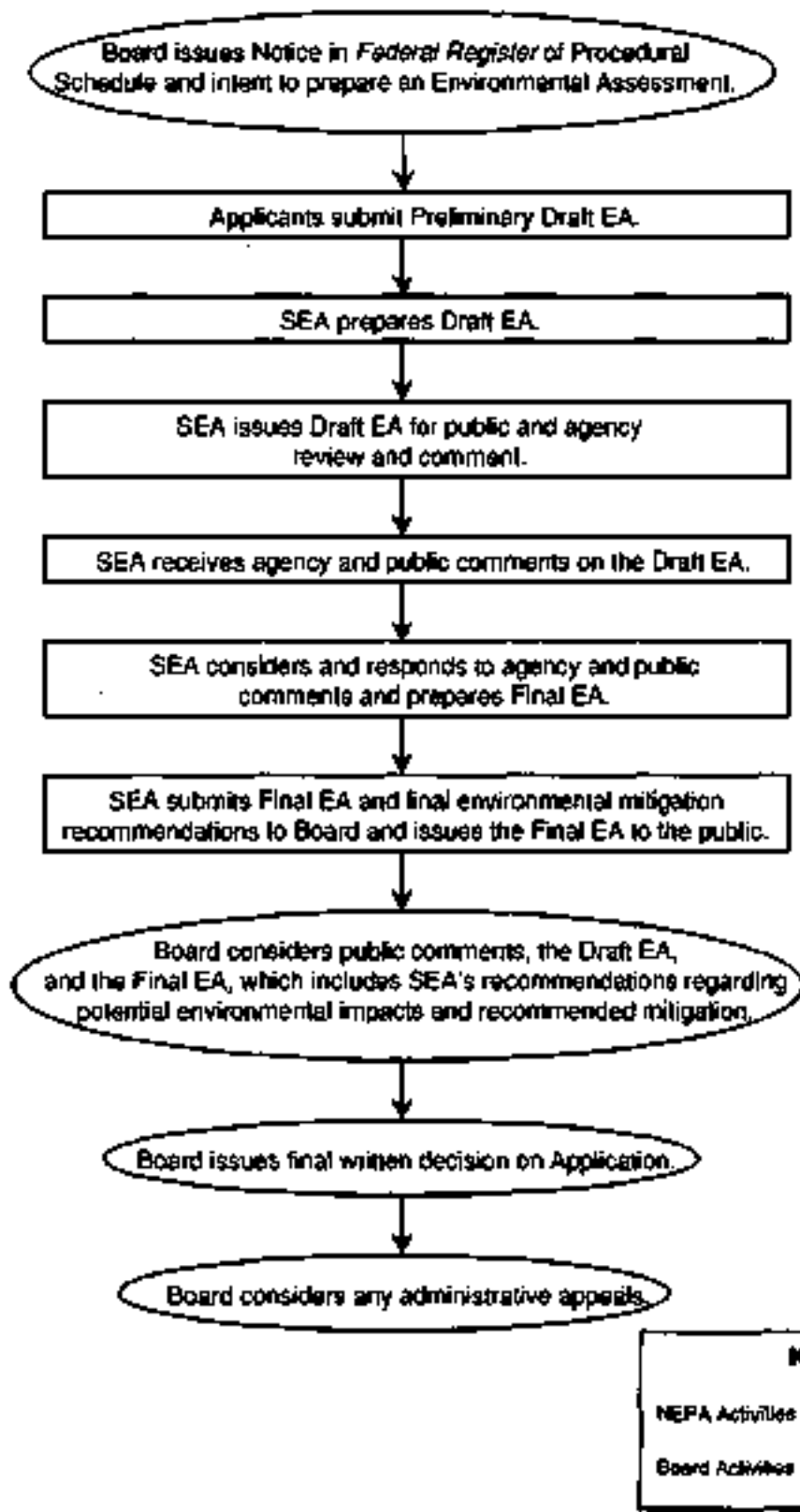
SEA is responsible for conducting the environmental review of the proposed CN/IC Acquisition on behalf of the Board, as shown in Figure 1-2, "Summary of Environmental Review Process."

In performing its environmental analysis, SEA reviewed the Applicants' Application, Operating Plan, and errata to the Application to identify projected changes in rail traffic on rail line segments and activity at rail yards and intermodal facilities that could cause potential environmental impacts. Following their submission of the Operating plan, the Applicants requested that the Board modify its environmental process from previous railroad acquisitions. Instead of submitting an Environmental Report assessing potential environmental impacts, as applicants had done in some previous merger cases, the Applicants sought permission to submit a Preliminary Draft EA (PDEA) to SEA. In decision No. 5, the Board found that this approach was reasonable and directed the Applicants to prepare a PDEA under SEA's guidance. SEA reviewed and verified all the information in the PDEA and prepared this Draft EA with its third-party contractor using appropriate information and analysis from the PDEA. This Draft EA also contains the preliminary environmental conditions that SEA developed. SEA's participation, oversight, and guidance have been extensive throughout the EA process.

The Applicants also developed a Safety Integration Plan (Plan), according to FRA guidelines, that describes how they would safely merge the existing CN and IC systems if the proposed Acquisition is approved. They submitted the plan to the Board as required by Board Decision No. 6. The Board and FRA have entered into a Memorandum of Understanding (MOU) to coordinate their ongoing oversight of the Applicants' safety integration activities. FRA has reviewed the Applicants' Plan and provided comments to the Board. Appendix V, "Safety Integration Plan," contains the entire Plan, FRA's comments, and the MOU. Chapter 7, "Safety Integration Plan," presents a discussion of the Plan, including instructions on how to submit comments. One of the Board's primary purposes in including the Applicants' Safety Integration Plan in this Draft EA is to provide other public agencies and the general public with an opportunity to review and comment on its contents.

Consulting with other government agencies and involving the public are important to the Board's environmental review process. SEA considered pertinent Federal statutes, regulations, and executive orders, and it coordinated and consulted with appropriate agencies to ensure that they were notified of the proposed CN/IC Acquisition and knew about the time frames for agency review and comment on the Draft EA. To encourage public involvement in the environmental review process, SEA distributed an information fact sheet to notify the public of the forthcoming Draft EA and to provide instructions on how to submit comments on the Draft EA or any other environmental concerns. Chapter 2, "Overview of Public Participation," contains a complete discussion of SEA's agency consultation and public notification activities and the public comment period.

SEA's environmental review of the proposed CN/IC Acquisition is a multistep process. After SEA considers all public comments received on this Draft EA (including the recommended mitigation), reviews all other available environmental information, consults with appropriate agencies and concerned parties and communities, and conducts additional environmental analysis



**FIGURE 1-2**  
**SUMMARY OF ENVIRONMENTAL REVIEW PROCESS**

where appropriate, SEA, with the assistance of its independent third-party contractors, will prepare a Final EA containing SEA's final environmental analysis and recommended environmental mitigation.

The Board will consider the entire environmental record including the Draft EA, Final EA, and all public comments to make its final decision for this case. Table 1-1, "Board's Procedural and SEA's Environmental Review Schedule," details the Board's procedural schedule and SEA's environmental review schedule for the proposed CN/IC Acquisition. Figure 1-3, "The Board's Decision-making Process for the Proposed CN/IC Acquisition," depicts the Board's decision-making process.

In performing its review, SEA has engaged an independent third-party contractor to assist with environmental analysis and the preparation of environmental documents regarding the proposed CN/IC Acquisition. The Board's environmental rules and those of the CEQ specifically permit the use of agency-approved, independent third-party contractors (49 CFR 1105.10[d] and 40 CFR 1506.5[c], respectively).

In the proposed CN/IC Acquisition, as in all Board proceedings where third-party contractors are retained, the independent third-party contractors' scope of work, approach, and activities are under SEA's sole supervision, direction, and control. The contractors, in effect, are an extension of SEA's staff. They work under SEA's direction to conduct independent environmental analysis; develop appropriate environmental methodologies, documentation, and mitigation options; and verify the environmental information provided by the railroads, consulting agencies, and all other interested parties.

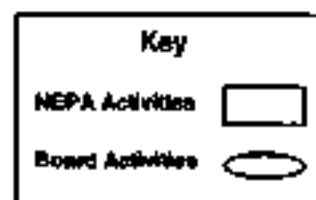
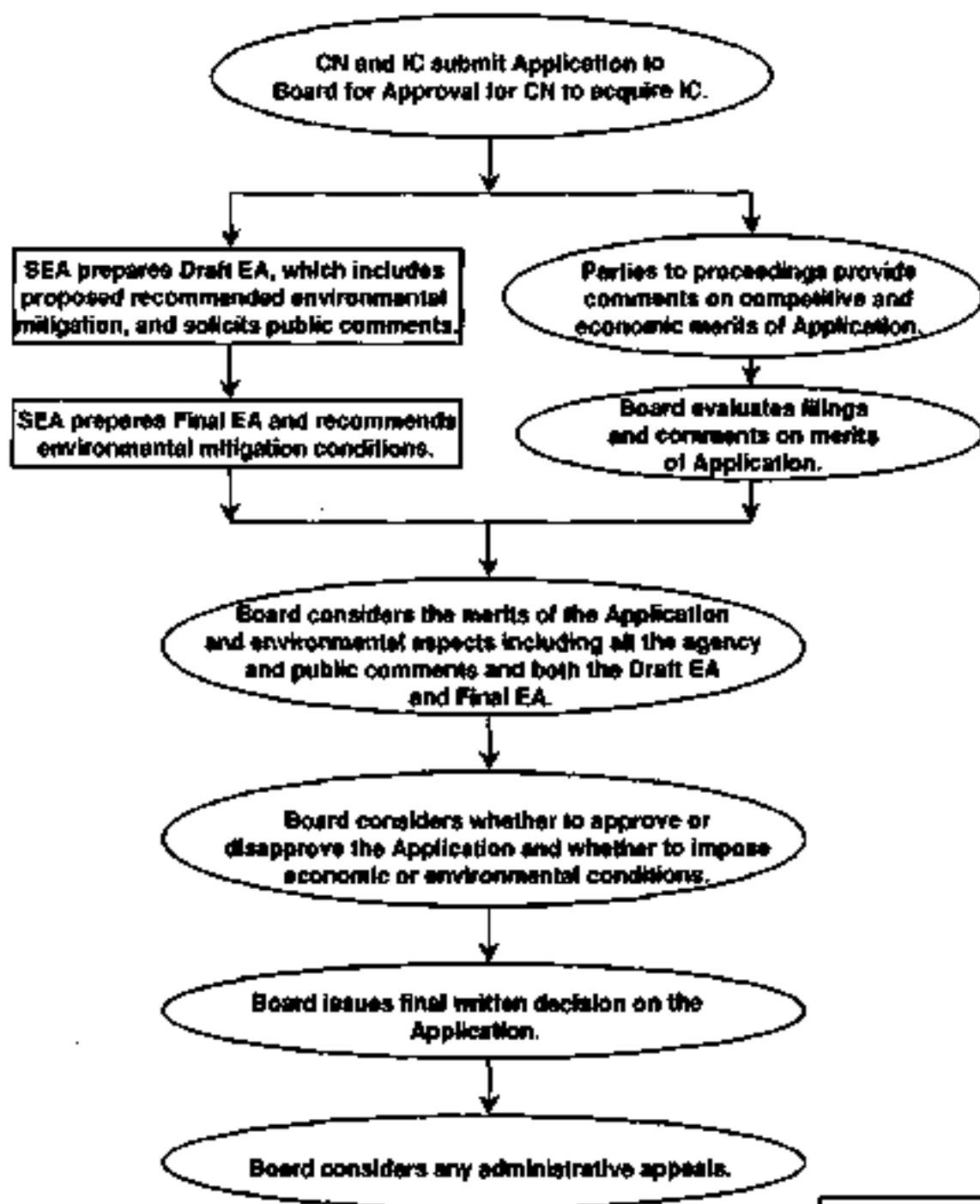
### **1.3 ROLES OF OTHER PARTIES**

#### **1.3.1 Applicants**

CN and IC are joint Applicants in the proposed CN/IC Acquisition. In the environmental review process, the Applicants have provided information on existing and proposed railroad operations and anticipated environmental effects. The information provided included the Applicants' Operating Plan and Application, and a Preliminary Draft EA and supplemental information. Throughout the process, SEA has provided appropriate oversight and guidance to the Applicants and their environmental contractors regarding data collection, methods for analyzing environmental effects, and verification of analysis results. If the Board approves the proposed CN/IC Acquisition with conditions, including environmental conditions, CN/IC would be responsible for implementing any conditions the Board may impose.

#### **1.3.2 Other Agencies**

The following paragraphs briefly discuss the agencies that SEA consulted with in the course of the environmental review process. SEA has provided each of these agencies with the Draft EA



for their review and comment. SEA will carefully consider their comments in preparing the Final EA and in making final mitigation recommendations to the Board. The Board will exercise its authority with due regard for the jurisdiction and expertise of other Federal agencies.

#### **The Federal Railroad Administration (FRA)**

FRA, an agency within DOT, is the Federal agency primarily responsible for railroad safety matters. FRA has issued substantive railroad safety regulations, most of which specifically address one of three major elements of the railroad system: the rolling equipment (such as locomotives and rail cars), the track and signal system over which railroads operate, and the rules for conducting rail operations. FRA regulations (49 CFR 200 to 240) include topics such as operating regulations and procedures; track safety standards and safe track speed; programs of instruction, testing, and monitoring of train and engine crews; hours of service for railroad personnel; accident reporting; licensing of locomotive engineers; drug and alcohol testing of employees; and inspection and testing of train cars, locomotives, signals, and trains. FRA generally subjects the railroads to liability for a civil penalty for violating FRA regulations.

As noted previously, the Board required the Applicants to prepare a Safety Integration Plan. The Board and FRA have entered into a Memorandum of Understanding regarding the Applicants' Safety Integration Plan, which describes how the Applicants would safely integrate their operations if the proposed Acquisition is approved. FRA also recently conducted a safety evaluation of the Illinois Central Railroad Company and will continue to review railroad safety issues related to the proposed CN/IC Acquisition, including the Applicants' Safety Integration Plan.

#### **Council on Environmental Quality (CEQ)**

CEQ has developed regulations for implementing NEPA. CEQ also provides clarification and guidance on NEPA regulations and evaluates existing and proposed policies and activities of the Federal government involving environmental issues (regulations at 40 CFR Parts 1500-1508).

#### **Environmental Protection Agency (EPA)**

EPA has broad oversight and implementing responsibility for many Federal environmental laws, including the Clean Air Act; Clean Water Act; Comprehensive Environmental Response, Compensation, and Liability Act; and Superfund Amendment and Reauthorization Act. EPA also provides guidance and advice in complying with appropriate Executive Orders, including Executive Order 12898 on Environmental Justice, Executive Order 11990 on Protection of Wetlands, and Executive Order 11988 on Floodplain Management.

#### **U.S. Army Corps of Engineers (the Corps)**

The Corps is responsible for maintaining and operating certain navigation and flood control projects. In addition, under Section 404 of the Clean Water Act, the Corps is responsible for regulating the discharge of dredge or fill materials into the nation's waters, including wetlands.

The Corps also regulates, under Sections 9 and 10 of the Rivers and Harbors Act of 1899, activities on navigable waters that could affect the course, location, and capacity of such waters.

#### **U.S. Coast Guard**

The Coast Guard has been asked to review this project to ascertain the need for any necessary permits and review the projected increase in train traffic that might result in more frequent operation of movable bridges, because of changes that might affect navigable waterways of the United States. Any construction involving navigable waterways (e.g., new bridges or rehabilitated old structures) would have to meet the Coast Guard's navigational clearance limits or guidelines to avoid obstructions. The Coast Guard also oversees ongoing operations on drawbridges.

#### **Advisory Council on Historic Preservation (ACHP)**

The National Historic Preservation Act (NHPA) requires Federal agencies to consider the effects of their actions on historic and cultural resources. Under NHPA, the Board consults with appropriate State Historic Preservation Offices (SHPOs) and ACHP. SEA has asked ACHP to review the discussion in the Draft EA of possible effects on historic and cultural resources. SEA also has, and will continue to consult with SHPOs and other appropriate parties to identify historic and cultural resources and determine whether they would be adversely affected by the proposed CN/IC Acquisition and, if so, to develop appropriate mitigation.

#### **U.S. Fish and Wildlife Service (FWS)**

FWS is the Federal agency with primary expertise for fish, wildlife, and natural resources issues. FWS also is responsible for implementing the Endangered Species Act and, through its regional offices, for consulting with other Federal agencies on potential impacts on threatened and endangered species.

#### **Bureau of Indian Affairs (BIA)**

BIA administers and manages more than 56 million acres of land the Federal government holds in trust for Native Americans. BIA works with Native American tribes to protect and develop their lands and resources. SEA has provided copies of the Draft EA to BIA for their review and comment.

#### **Natural Resources Conservation Service (NRCS)**

This agency, formerly the Soil Conservation Service, is charged with protecting farmlands, particularly those classified as prime, unique, or of state or local importance. NRCS also provides technical assistance to conservation districts, individuals, communities, watershed groups, tribal governments, and other agencies on reducing soil erosion and wetland loss.



## **Federal Emergency Management Agency (FEMA)**

FEMA identifies 100-year floodplains. SEA has provided the Draft EA to FEMA for its review to ensure that the proposed CN/IC Acquisition would comply with relevant laws, such as the National Flood Insurance Act of 1968 and Executive Order 11988 on National Floodplain Insurance, concerning construction in floodplains.

### **1.4 HOW TO SUBMIT ENVIRONMENTAL COMMENTS**

SEA encourages the public to participate in the environmental review of the proposed CN/IC Acquisition by commenting on the Draft EA and/or the Applicants' Safety Integration Plan during the 30-day comment period. Comments may be submitted to the address below. The public may file comments on both the EA and Safety Integration Plan in one submittal. When submitting comments, please provide one original and ten copies to:

Office of the Secretary  
Case Control Unit  
STB Finance Docket No. 33556  
Surface Transportation Board  
1925 K Street, NW  
Washington, DC 20423-0001

The following information should appear in the lower left-hand corner of the envelope:

Attention: Elaine K. Kaiser  
Environmental Project Director  
Environmental Filing

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## **CHAPTER 2**

### **OVERVIEW OF PUBLIC PARTICIPATION**

Chapter 2 provides an overview of the public participation activities that the Surface Transportation Board (Board), Section of Environmental Analysis (SEA) conducted in developing the Draft Environmental Assessment (Draft EA) for Canadian National Railway Company's (CN) proposed Acquisition of Illinois Central Corporation (IC). In conducting its public participation activities, SEA considered pertinent Federal statutes, regulations, and executive orders. Samples of public participation materials SEA used to consult with other government agencies and inform and involve the public in preparing environmental documents appear in Appendix N, "Public Participation Materials."

SEA designed its public participation activities to broadly inform the public and public agencies about the proposed CN/IC Acquisition and to notify the public and public agencies of the opportunity to raise environmental concerns and review and comment on the Draft EA. The Draft EA identifies and analyzes the potential environmental effects of the proposed CN/IC Acquisition and includes SEA's preliminary mitigation recommendations. Public comments will allow SEA to assess public concerns and issues and determine whether additional environmental analysis and mitigation measures are necessary in preparing the Final EA.

#### **2.1 PUBLIC PARTICIPATION NOTIFICATION**

##### **2.1.1 Public Notification Activities**

SEA and the Board undertook a number of notification activities to inform the public about the proposed CN/IC Acquisition. Before the Applicants filed their Primary Application, the Board placed in the *Federal Register* a notice that presented a proposed procedural schedule and invited public comment. This notice included a statement that the Board intended to prepare an Environmental Assessment for public review and comment. On August 14, 1998, the Board published the final procedural schedule in the *Federal Register*. On September 14, 1998, the Board published a general environmental review schedule in the *Federal Register* to announce that SEA planned to issue the Draft EA for public review by November 1998, and to issue the Final EA before the Board's Voting Conference and Oral Argument.<sup>9</sup> The Board also served the *Federal Register* notices on the Parties of Record. Appendix N, "Public Participation Materials," contains copies of the three *Federal Register* notices. Additionally, Appendix Q, "Relevant

<sup>9</sup> In Board Decision No. 11, issued on October 2, 1998, the Board extended the previously set Procedural Schedule by 2 weeks, in response to requests for a 30-day extension in submitting responses to the Primary Application. Board Decision No. 11 is contained in Appendix Q, "Relevant Board Decisions."

Board Decisions," contains a copy of the Board's Decision No. 6, which announced the Board's intent to publish an EA. The Board also issued two press releases; the first informed the general public that the Board had received the joint CN/IC Application and described the Board's review of the proposed CN/IC Acquisition, and the second announced the Board's acceptance of the Application and the final procedural schedule.

To notify interested parties of its environmental review of the proposed CN/IC Acquisition, SEA mailed an Environmental Fact Sheet, describing the proposed Acquisition and SEA's environmental review process, to approximately 2,400 Federal, state, and local elected and public officials; community organizations and groups; individual members of the public; and public agencies. Appendix N, "Public Participation Materials," contains a copy of the Environmental Fact Sheet and the cover letter that accompanied it. SEA also established a website ([www.cnicacquisition.com](http://www.cnicacquisition.com)) and toll-free telephone hotline (1-888-869-1997) on which interested parties can comment or obtain updated information on SEA's environmental review and other environmental issues related to the proposed CN/IC Acquisition.

Under Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," SEA conducted additional public participation activities in communities where identified environmental justice populations could experience potential environmental impacts as a result of the proposed CN/IC Acquisition. The purpose of the Executive Order is to encourage Federal agencies to identify and address, as appropriate, disproportionately high and adverse impacts on minority and low-income populations with respect to human health and the environment. In addition to Executive Order 12898, SEA also applied "Council on Environmental Quality's Environmental Justice Guidance Under the National Environmental Policy Act," the "Department of Transportation Order to Address Environmental Justice in Minority Populations and Low-Income Populations," and Environmental Protection Agency (EPA) "Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses," in conducting its environmental analysis. Chapter 4, "Environmental Consequences—Operational Impacts and Mitigation," Section 4.13, "Environmental Justice," contains a detailed discussion of the methodologies and analysis techniques that SEA used to identify potentially affected environmental justice populations.

Based on the environmental justice analysis, SEA conducted research in 35 communities with identified environmental justice populations to find appropriate local avenues for disseminating information. Prior to issuing the Draft EA, SEA mailed the Environmental Fact Sheet described earlier in this section to public and elected officials, community organizations, media, and individuals in these 35 communities.

In further analysis, SEA applied criteria of significance to the 35 communities and identified 13 where environmental justice populations could experience disproportionately high and adverse environmental impacts as a result of the proposed CN/IC Acquisition. SEA developed a public outreach plan and tailored the plan to these identified communities. SEA identified local media, libraries, organizations and groups, and public and elected officials to use in informing environmental justice populations about the proposed CN/IC Acquisition. A copy of SEA's

public outreach plan for communities with environmental justice populations is contained in Appendix N, "Public Participation Materials."

Upon publishing the Draft EA on November 9, 1998, the Board and SEA conducted a variety of notification activities to inform the public of the availability of the Draft EA. The Board published a notice in the *Federal Register* on November 9, 1998 announcing that the Draft EA was available for public review and describing the public comment process. The Board also issued a press release to the newspaper with the highest circulation in every affected county, announcing the publication and availability of the Draft EA and describing the public comment period.

Upon publication of the Draft EA, SEA mailed copies, accompanied by a cover letter encouraging recipients to submit comments for consideration in preparing the Final EA, to approximately 800 interested parties. Draft EA recipients included Federal, state, regional agencies; governors in affected states; county officials in counties in the system; city officials in communities with populations over 5,000 located within 2,000 feet of analyzed rail segments; libraries in certain communities with identified environmental justice populations; and interested persons who specifically requested a copy. SEA also mailed to approximately 1,600 potentially interested parties who did not receive a copy of the Draft EA a separate Fact Sheet, informing them that the Draft EA was available for public review and providing instructions on how to receive a copy, obtain additional information, and submit comments. These recipients included elected Federal, state, county, and city officials in potentially affected areas and various organizations and individuals, including those from communities with environmental justice populations.

Additionally, upon publishing the Draft EA, SEA conducted notification regarding availability of the Draft EA and the public comment period in the 13 communities in which SEA identified environmental justice populations that could experience disproportionately high and adverse impacts. SEA notified these communities by mailing the Fact Sheet to local organizations and elected and public officials, sending public service announcements to local radio stations, placing notices in local newspapers, and mailing a copy of the Draft EA to local libraries for public review.

Listed below are the 35 communities with identified environmental justice populations that SEA notified both prior to publishing the Draft EA and upon publishing the Draft EA:

- |                   |                    |
|-------------------|--------------------|
| • Broadview, IL.  | • Onarga, IL.      |
| • Burbank, IL.    | • Otto, IL.        |
| • Cairo, IL.      | • Phoenix, IL.     |
| • Carbondale, IL. | • Pulaski, IL.     |
| • Centralia, IL.  | • Springfield, IL. |
| • Champaign, IL.  | • Stickney, IL.    |

- |                    |                   |
|--------------------|-------------------|
| • Chicago, IL.     | • Tuscola, IL.    |
| • Cicero, IL.      | • Clinton, KY.    |
| • Clinton, IL.     | • Fulton, KY.     |
| • Du Quoin, IL.    | • Detroit, MI.    |
| • Grandview, IL.   | • Ferndale, MI.   |
| • Harvey, IL.      | • Hamtramck, MI.  |
| • Hazel Crest, IL. | • Pontiac, MI.    |
| • Kankakee, IL.    | • Port Huron, MI. |
| • Markham, IL.     | • Royal Oak, MI.  |
| • Mattoon, IL.     | • Troy, MI.       |
| • Monee, IL.       | • Waterford, MI.  |
| • Mounds, IL.      |                   |

Upon publishing the Draft EA, SEA notified the following 13 communities with environmental justice populations that could experience disproportionately high and adverse environmental impacts as a result of the proposed CN/IC Acquisition.

- |                   |                |
|-------------------|----------------|
| • Cairo, IL.      | • Monee, IL.   |
| • Carbondale, IL. | • Mounds, IL.  |
| • Centralia, IL.  | • Onarga, IL.  |
| • Champaign, IL.  | • Otto, IL.    |
| • Du Quoin, IL.   | • Tuscola, IL. |
| • Kankakee, IL.   | • Clinton, KY. |
| • Mattoon, IL.    |                |

### 2.1.2 Agency Notification Activities

SEA conducted agency consultation activities to inform public agencies about the proposed CN/IC Acquisition. SEA consulted with appropriate Federal, state, and local public agencies through correspondence, telephone consultation, and agency meetings. Through its interaction with agencies, SEA gathered data and information about the study area and any related projects.

SEA will carefully assess the comments that public agencies submit on the Draft EA and other environmental concerns that are raised and address them in the Final EA.

As part of its agency consultation process, SEA issued the Environmental Fact Sheet described in Section 2.1.1, "Public Notification Activities," to approximately 425 public agencies after CN and IC filed their Application with the Board. SEA provided this information to state and local planning, environmental, transportation, and historic preservation agencies. SEA consulted with agencies in affected areas by letter, telephone, or meetings to coordinate issues, collect data, and provide information. Appendix T, "List of Agency Consultations and Relevant Correspondence," contains a complete list of the agencies with which SEA consulted while developing the Draft EA. Appendix T also contains copies of correspondence SEA sent to appropriate public agencies regarding the proposed CN/IC Acquisition.

Upon publication of the Draft EA, SEA mailed copies, accompanied by a cover letter encouraging recipients to submit environmental comments for consideration in preparing the Final EA, to the approximately 425 identified public agencies. Appendix N, "Public Participation Materials," contains a copy of the cover letter SEA mailed with the Draft EA.

## **2.2 Draft EA Public Comment Process**

The public comment process is a critical part of SEA's environmental review. Therefore, SEA conducted extensive public participation activities to ensure that the public and public agencies were aware of the proposed CN/IC Acquisition and had the opportunity to review and comment on the Draft EA. SEA established a 30-day public comment period and a process whereby comments will be received, logged, and addressed by environmental issue area.

After fully considering all agency and public comments received on the Draft EA, SEA will conduct any additional analysis that is necessary, review all environmental information available to date, and consult further with appropriate public agencies. SEA will then prepare the Final EA, which will include its final recommendations to the Board regarding potential environmental impacts and recommended mitigation for the proposed CN/IC Acquisition. The Board will then consider the entire environmental record including the Draft EA, the Final EA, and all public comments in making its final decision in this case.

Complete instructions on how to submit comments to SEA regarding the proposed CN/IC Acquisition are contained in Chapter 1, "Introduction and Background," Section 1.5, "How To Submit Environmental Comments."

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## **CHAPTER 3**

### **PROJECT DESCRIPTION**

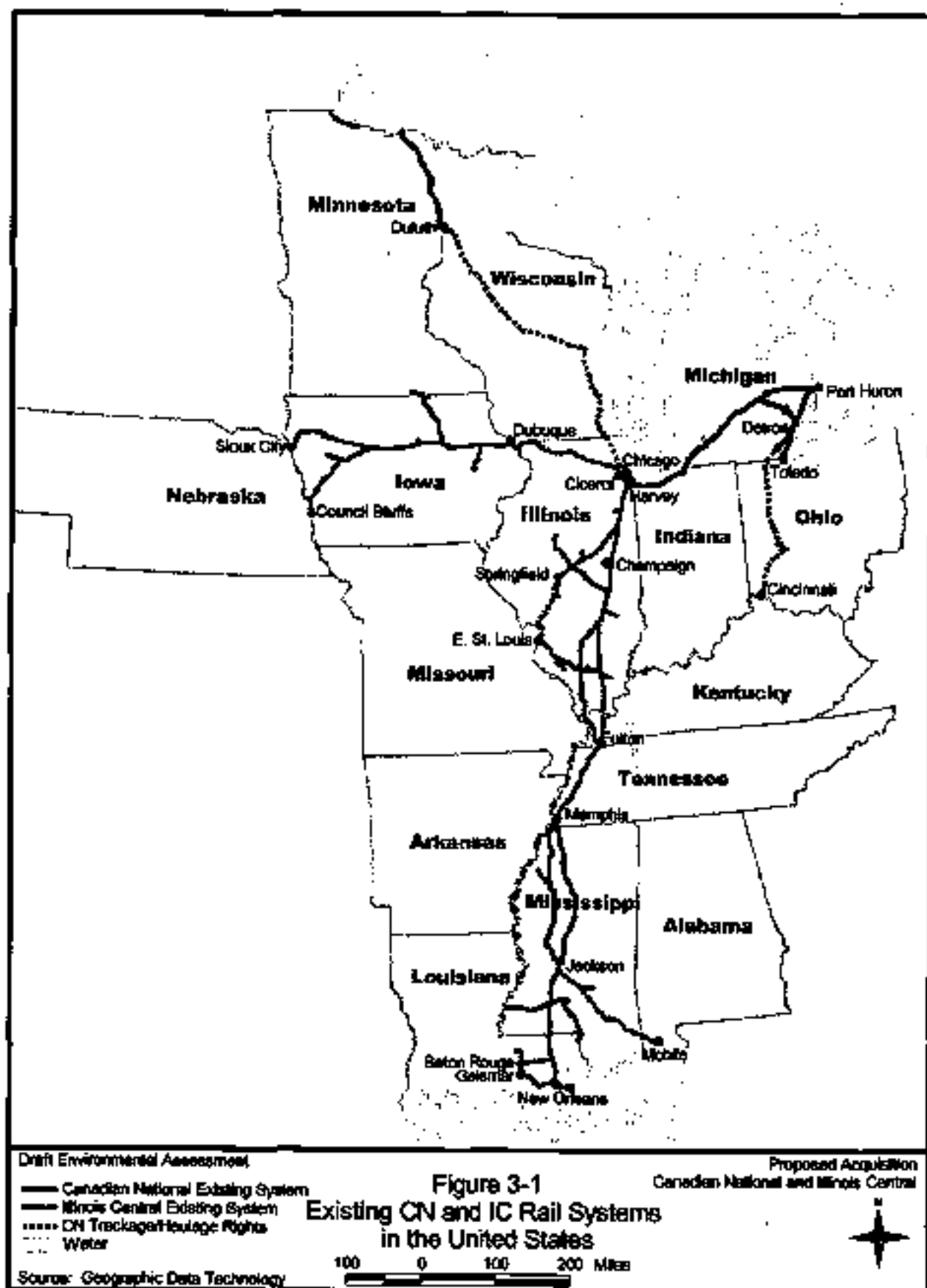
Chapter 3 describes the proposed action and provides background on Canadian National Railway Company and its subsidiaries (referred to collectively as CN), Illinois Central Corporation and its subsidiaries (referred to collectively as IC), and various passenger rail systems. The chapter describes the scope of the Draft Environmental Assessment (Draft EA), the thresholds used to determine the activities the Section of Environmental Analysis (SEA) analyzed, and the locations and facilities that SEA evaluated in this Draft EA. In addition, this chapter describes related actions, alternatives to the proposed action, and formal filings with the Board, including Inconsistent and Responsive (IR) Applications, and Comments and Requests for Conditions.

#### **3.1 OVERVIEW OF EXISTING AND PROPOSED SYSTEMS**

On July 15, 1998, CN and IC filed a joint Application, Operating Plan, and Errata with the Surface Transportation Board (Board) seeking authority for CN to acquire control of IC. As described in their Application, CN and IC propose to combine their rail systems to form a single system. Because the systems currently connect "end to end," the principal combined route would remain identical to those of the individual railroads. Currently, CN's rail network is located in both Canada and the United States. Within the U.S., CN's rail system operates in eight states, and IC's rail system operates in nine states. In this Draft EA, SEA evaluated the potential effects of the proposed CN/IC Acquisition only within the United States. (See Figure 3-1, "Existing CN and IC Rail Systems in the United States.")

##### **3.1.1 Existing Canadian National System**

CN operates approximately 1,150 route miles in the United States and 14,150 route miles in Canada. CN serves every major metropolitan area of Canada. In the United States, CN serves the gateway cities of Buffalo, New York; Detroit, Michigan; Duluth, Minnesota; Superior, Wisconsin; and Chicago, Illinois. CN has three principal service corridors: the Eastern, Western, and Transcontinental. The Eastern Service Corridor runs from Halifax, Nova Scotia on the Atlantic Coast through Montreal, Quebec, and Toronto, Ontario to Chicago via the St. Clair Tunnel. The Western Service Corridor extends from Vancouver and Prince Rupert, British Columbia on the Pacific Coast to Chicago and Thunder Bay, Ontario on Lake Superior. The Transcontinental Corridor extends from Halifax to Prince Rupert and Vancouver.



### 3.1.2 Existing Illinois Central System

The current IC rail network consists of approximately 3,370 route miles of track in nine states running north-south between Chicago, Illinois and the Gulf of Mexico and east-west from Chicago toward Nebraska and Minnesota. IC's main north-south route reaches south from Chicago to the major metropolitan areas on the Mississippi River, including St. Louis, Missouri; Memphis, Tennessee; Jackson, Mississippi; and New Orleans, Louisiana. IC's east-west route extends from Chicago, Illinois in the East to Sioux City and Council Bluffs, Iowa (near Omaha) in the West. IC also has access to the port in Mobile, Alabama, on the Gulf of Mexico, as well as barge access to Florida.

### 3.1.3 Passenger Rail Systems

Both CN and IC are freight railroads, but they share track with passenger rail services in some areas. The proposed action could affect two types of passenger rail services: Amtrak intercity rail operations and regional transportation commuter rail operations. Statutory and contractual agreements, which would remain intact whether or not the Board approves the proposed CN/IC Acquisition, govern the relationships between passenger rail services and the Applicants.

Amtrak operates on approximately 1,190 miles of CN or IC rail lines in eight states—Illinois, Indiana, Kentucky, Louisiana, Michigan, Mississippi, New York, and Tennessee. These operations include intercity service between: (1) Chicago, Illinois and Toronto, Ontario; (2) Chicago, Illinois and Detroit, Michigan; (3) Chicago, Illinois and New Orleans, Louisiana; (4) Chicago, Illinois and Indianapolis, Indiana; (5) Chicago, Illinois and Joliet, Illinois; and (6) New York, New York and Montreal, Ontario. Amtrak trains that provide service between Los Angeles, California and Jacksonville, Florida also use a small portion of IC rail line in New Orleans, Louisiana.

In the Chicago, Illinois metropolitan area, the Northern Illinois Railroad Corporation (Metra) provides commuter service between Chicago and Joliet, Illinois using approximately 35 miles of IC-owned rail line. This is the only commuter rail service that occurs on any CN or IC rail line in the United States. Except for some minor switching operations in the Chicago area, CN and IC do not operate any freight trains on rail lines owned by other railroads where commuter rail service occurs.

### 3.1.4 Overview of Proposed System

The proposed CN/IC Acquisition is an end-to-end coupling of the existing CN and IC systems. The resulting CN/IC system would cover approximately 18,670 miles, of which approximately 4,520 miles would be in the United States. The new system would be "Y-shaped" with its hub in Harvey, Illinois south of Chicago. The proposed system would extend to the Atlantic and Pacific coasts of Canada at Halifax and at Prince Rupert and Vancouver, respectively, and to the Gulf of Mexico at New Orleans, Louisiana. (See Figure 3-2, "Proposed CN/IC Rail System in the United States.")



The Applicants state that the proposed CN/IC Acquisition would increase and improve service because it would provide single-line, coast-to-coast service; coordinate operations; divert traffic from trucks and other railroads; and provide better operating efficiency. (For additional information on the benefits of the proposed CN/IC Acquisition, see Section 1.1, "Purpose of and Need for the Proposed CN/IC Acquisition.")

### 3.2 THRESHOLDS FOR ENVIRONMENTAL ANALYSIS

The Applicants' Operating Plan and Errata indicate that the proposed CN/IC Acquisition would modify existing CN and IC rail operations and cause changes to existing rail activities. To conduct its environmental review, SEA evaluated changes in the following categories of railroad activities that would result from the proposed CN/IC Acquisition:

- Increases and decreases in rail traffic on all rail line segments.
- Increases and decreases in activities at all intermodal facilities.
- Increases and decreases in activities at all rail yards.
- Construction of new rail facilities, including rail line connections.

In conducting its environmental analysis, SEA first applied the Board's thresholds for environmental analysis at 49 CFR Part 1105. The Board thresholds apply specifically to air quality and noise. As the threshold for issue areas where the Board does not have specific thresholds for environmental analysis, SEA assessed whether it would be appropriate to apply thresholds developed for the recent Conrail Acquisition. SEA concluded that the analysis thresholds developed for the Conrail Acquisition were also appropriate for environmental analysis of the proposed CN/IC Acquisition.<sup>10</sup> For example, to analyze the potential effects on passenger rail safety, SEA used an increase of one freight train per day. To analyze the potential effects of hazardous materials transport, SEA considered all rail line segments with an increase in the annual volume of hazardous materials transported. Table 3-1, "Board's Thresholds for Environmental Analysis," lists all the thresholds SEA used to prepare this Draft EA.

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<sup>10</sup> SEA developed reasonable thresholds for its evaluation of environmental effects on resources other than noise and air quality for the recent Conrail Acquisition proceeding. The thresholds used in that case are similar to the thresholds used here for the CN/IC Acquisition. See Final Environmental Impact Statement, pp. 2-1 through 2-6 (May 1998), *CSX Corporation and CSX Transportation, Inc., Norfolk Southern Corporation and Norfolk Southern Railway Company—Control and Operating Leases/Agreements—Conrail Inc. and Consolidated Rail Corporation*, STB Finance Docket No. 33388.

**TABLE 3-1  
BOARD'S THRESHOLDS FOR ENVIRONMENTAL ANALYSIS**

Environmental Impact Category	Activities Evaluated for Potential Environmental Effects		
	Rail Line Segments	Intermodal Facilities	Rail Yards
<b>Safety</b>			
Freight Rail Operations	Rail line segments with an average increase of eight or more freight trains per day.	N/A*	N/A*
Hazardous Materials Transport	Rail line segments with an increase in the annual volume of hazardous materials transported.	All intermodal facilities.	All rail yards.
Passenger Operations	Rail line segments with existing passenger rail traffic and an average increase of one or more freight trains per day.	N/A	N/A
Highway/Rail At-grade Crossing Safety	All highway/rail at-grade crossings on rail line segments with an average increase of eight or more trains per day.	N/A	N/A
<b>Traffic and Transportation</b>			
Highway/Rail At-grade Crossing Delay	Highway/rail at-grade crossings on segments that meet or exceed the Board's thresholds for environmental analysis, <sup>1</sup> and with average daily traffic (ADT) of 5,000 vehicles or greater, or crossings closer than 800 feet apart.	N/A	N/A
Passenger Rail Service Capacity	Rail line segments with existing passenger rail traffic and an increase of one or more freight trains per day.	N/A	N/A
			Highway/rail at-grade crossings created by proposed constructions on rail line segments that meet or exceed the Board's thresholds for environmental analysis and with ADT of 5,000 or more, or crossings closer than 800 feet.

**TABLE 3-1  
BOARD'S THRESHOLDS FOR ENVIRONMENTAL ANALYSIS**

Environmental Impact Category	Activities Evaluated for Potential Environmental Effects			
	Rail Line Segments	Intermodal Facilities	Rail Yards	Constructions
Roadway Capacity	N/A	Intermodal facilities with an increase of 50 or more trucks per day or a 10% increase in ADT on affected roadways.	N/A	N/A
Navigation	Movable-span bridges on all rail line segments.	N/A	N/A	N/A
Energy	System-wide evaluation of truck-to-rail diversions.	System-wide evaluation of intermodal facilities.	System-wide evaluation of rail yards.	N/A
<b>Air Quality</b>				
Attainment or Maintenance Areas	Rail line segments with an increase of eight or more trains per day or at least a 100% increase in rail traffic (measured in annual gross ton-miles).	Intermodal facilities with an increase of 50 or more trucks per day or a 10% increase in ADT on affected roadways.	Rail yards with a 100% or greater increase in carload activity per day.	All constructions.
Nonattainment Areas	Segments with an increase of three or more trains per day or at least a 50% increase in rail traffic (annual gross ton-miles). <sup>a</sup>	Intermodal facilities with an increase of 50 or more trucks per day or a 10% increase in ADT on affected roadways.	Rail yards with a 20% or greater increase in carload activity per day.	All constructions.
Noise	Rail line segments with an increase of eight trains per day or a 100% increase in annual gross ton miles.	Intermodal facilities with an increase of 50 or more trucks per day or a 10% increase in ADT on affected roadways.	Rail yards with an increase of 100% carload activity per day.	All constructions.
Cultural Resources	N/A	N/A	N/A	All constructions.
Hazardous Waste Sites	N/A	N/A	N/A	All constructions.
Land Use	N/A	N/A	N/A	All constructions.

**TABLE 3-1  
BOARD'S THRESHOLDS FOR ENVIRONMENTAL ANALYSIS**

Environmental Impact Category	Activities Evaluated for Potential Environmental Effects			
	Rail Line Segments	Intermodal Facilities	Rail Yards	Constructions
Natural Resources	N/A	N/A	N/A	All constructions.
Environmental Justice	All activities exceeding Board thresholds for environmental analysis.	All activities exceeding Board thresholds for environmental analysis.	All activities exceeding Board thresholds for environmental analysis.	All activities exceeding Board thresholds for environmental analysis.

ADT = Average Daily Traffic

N/A = Not Applicable.

Included in rail line segment analysis.

Air Quality Nonattainment Area: Increase of at least three trains per day, or a 50 percent increase in annual gross ton-miles. Air Quality Attainment or Maintenance Area: Increase of at least eight trains per day or a 100 percent increase in annual gross ton-miles.



### 3.3 THE PROPOSED ACTION

The following section describes the proposed activities that meet the Board's thresholds for environmental review (see Table 3-1, "Board's Thresholds for Environmental Analysis") as contained in the Applicants' Application. As described in detail below, SEA identified the following activities for environmental review:

- 90 rail line segments in Iowa, Illinois, Kentucky, Louisiana, Michigan, Mississippi, and Tennessee.
- Five rail yards in Illinois and Michigan.
- One intermodal facility in Illinois.
- Five rail construction projects in Illinois, Mississippi, and Tennessee.

#### 3.3.1 Rail Line Segments

Rail line segments are the portions of rail lines that run between two terminals or junction points. For the Draft EA, SEA analyzed a total of 90 rail line segments where the Applicants' projected increase in rail activity would meet or exceed the Board's thresholds for environmental analysis. These rail line segments included:

- A total of 11 individual rail line segments (approximately 156 miles of rail lines) in Illinois that meet or exceed the Board's thresholds for environmental analysis for air quality or noise. (See Table 3-2, "Rail Line Segments That Meet or Exceed the Board's Thresholds for Environmental Analysis.")
- A total of 86 rail line segments (approximately 1,838 miles of rail lines) in Iowa, Illinois, Kentucky, Louisiana, Michigan, Mississippi, and Tennessee where the proposed CN/IC Acquisition would result in increased hazardous materials transport.
- A total of 24 rail line segments (approximately 713 miles of rail lines) in Illinois, Indiana, Kentucky, Louisiana, Michigan, Mississippi, and Tennessee where projected activity would meet or exceed the Board's thresholds for analysis of passenger rail traffic.

Appendix B, "Rail Line Segments," contains a detailed list of the rail line segments and yards that meet or exceed the Board's thresholds for environmental review.

**TABLE 3-2**  
**RAIL LINE SEGMENTS THAT MEET OR EXCEED THE BOARD'S THRESHOLDS FOR**  
**ENVIRONMENTAL ANALYSIS**

Segment Description			Board's Thresholds Met				
Segment Number	From Station	To Station	Road	Air Quality	Noise	Passenger Train	Hazardous Materials
100	BRIDGEPORT, IL	BRC-CCP XING, IL	IC	X			X
102	BRC-CCP XING, IL	HAWTHORNE YD, IL	IC	X			X
104	HAWTHORNE YD, IL	BROADVIEW, IL	IC	X	X		X
115	DUBUQUE, IA	DELAWARE, IA	IC				X
117	DELAWARE, IA	MANCHESTER, IA	IC				X
120	MANCHESTER, IA	MARION JCT, IA	IC				X
123	MARION JCT, IA	CEDAR RAPIDS, IA	IC				X
157	CHICAGO 21ST STR, IL	BRIDGEPORT, IL	IC				X
158	BRIDGEPORT, IL	GLENN YARD, IL	IC				X
170	CHICAGO, IL	CHICAGO 21ST STR, IL	IC				X
171	CHICAGO, IL	CHICAGO 94 STR, IL	IC				X
173	CHICAGO 94 STR, IL	137th (RIVERDALE), IL	IC				X
174	137TH (RIVERDALE), IL	HARVEY, IL	IC				X
175	HARVEY, IL	HOMEWOOD, IL	IC	X		X	X
185	HOMEWOOD, IL	MATTESON (EJE), IL	IC	X		X	X
187	MATTESON (EJE), IL	KANKAKEE, IL	IC	X		X	X
190	KANKAKEE, IL	OTTO, IL	IC			X	X
205	OTTO, IL	GILMAN, IL	IC			X	X
210	GILMAN, IL	GIBSON CITY, IL	IC	X	X		
215	GIBSON CITY, IL	FULLERTON, IL	IC	X	X		
217	FULLERTON, IL	CLINTON, IL	IC	X	X		
225	CLINTON, IL	MOUNT PULASKI, IL	IC	X	X		
230	MOUNT PULASKI, IL	SPRINGFIELD, IL	IC	X	X		X
255	CMURCH, IL	COULTERVILLE, IL	IC				X
275	COULTERVILLE, IL	PINCKNEYVILLE, IL	IC				X
280	PINCKNEYVILLE, IL	DU QUOIN, IL	IC				X
305	GILMAN, IL	CHAMPAIGN, IL	IC			X	X
315	CHAMPAIGN, IL	MATTOON, IL	IC			X	X
320	MATTOON, IL	DECATUR, IL	IC				X
325	DECATUR, IL	MOUNT PULASKI, IL	IC				X
340	MATTOON, IL	EFFINGHAM, IL	IC			X	X
355	EFFINGHAM, IL	EDGEWOOD, IL	IC			X	X
360	EDGEWOOD, IL	CENTRALIA, IL	IC			X	X
365	CENTRALIA, IL	RENLAKE, IL	IC			X	X
370	RENLAKE, IL	DU QUOIN, IL	IC			X	X
375	DU QUOIN, IL	CARBONDALE, IL	IC			X	X
380	CARBONDALE, IL	CAIRO, IL	IC			X	X
385	CAIRO, IL	FULTON, KY	IC			X	X
390	EDGEWOOD, IL	AKIN JCT, IL	IC				X
395	AKIN JCT, IL	RUSS SPUR, IL	IC				X
397	RUSS SPUR, IL	FERBER, IL	IC				X
410	FERBER, IL	HARCO, IL	IC				X
412	HARCO, IL	DELTA 2, IL	IC				X
415	DELTA 2, IL	METROPOLIS, IL	IC				X
420	METROPOLIS, IL	CHILES, KY	IC				X
430	CHILES, KY	FULTON, KY	IC				X

**TABLE 3-2**  
**RAIL LINE SEGMENTS THAT MEET OR EXCEED THE BOARD'S THRESHOLDS FOR**  
**ENVIRONMENTAL ANALYSIS**

Segment Number	From Station	To Station	Road	Air Quality	Noise	Passenger Train	Hazardous Materials
435	FULTON, KY	DYERSBURG, TN	IC			X	X
440	DYERSBURG, TN	WOODSTOCK, TN	IC			X	X
453	WOODSTOCK, TN	GRENADA WYE, MS	IC				X
455	MEMPHIS YARDS, TN	MEMPHIS YARDS, TN	IC				X
475	WEST JCT, TN	LAKE CORMORANT, MS	IC			X	X
480	LAKE CORMORANT, MS	MARKS, MS	IC			X	X
485	MARKS, MS	SWAN LAKE, MS	IC			X	X
495	SWAN LAKE, MS	GREENWOOD, MS	IC			X	X
500	GREENWOOD, MS	YAZOO CITY, MS	IC			X	X
505	YAZOO CITY, MS	JACKSON, MS	IC			X	X
535	JACKSON, MS	BROOKHAVEN, MS	IC				X
595	BROOKHAVEN, MS	MCCOMB, MS	IC				X
600	MCCOMB, MS	HAMMOND, LA	IC				X
605	HAMMOND, LA	BATON ROUGE, LA	IC				X
635	GEISMAR, LA	BATON ROUGE, LA	IC				X
1000	SARNTIA, ON	SPARLINGVILLE, MI	CN				X
1005	SPARLINGVILLE, MI	IMLAY CITY, MI	CN				X
1015	IMLAY CITY, MI	BELSAY, MI	CN				X
1020	BELSAY, MI	FLINT, MI	CN				X
1023	FLINT, MI	SWARTZ CREEK, MI	CN				X
1030	SWARTZ CREEK, MI	DURAND, MI	CN				X
1035	DURAND, MI	BATTLE CREEK, MI	CN				X
1040	BATTLE CREEK, MI	PAVILION, MI	CN				X
1050	PAVILION, MI	SOUTH BEND, IN	CN				X
1052	SOUTH BEND, IN	WELLSBORO, IN	CN				X
1054	WELLSBORO, IN	GRIFFITH, IN	CN				X
1055	GRIFFITH, IN	THORTON JCT, IL	CN				X
1060	THORTON JCT, IL	HARVEY, IL	CN				X
1085	BAY CITY JCT, MI	RIVER ROUGE, MI	CN				X
1095	RIVER ROUGE, MI	FN TOWER, MI	CN				X
1100	FN TOWER, MI	D&I JCT, MI	CN				X
1105	D&I JCT, MI	FLAT ROCK, MI	CN				X
1135	DETROIT EAST YRD, MI	MILWAUKEE JCT, MI	CN				X
1140	MILWAUKEE JCT, MI	VINEWOOD, MI	CN			X	X
1149	BAY CITY JCT, MI	DETROIT, MI	CN				X
1158	FN TOWER, MI	MONROE, MI	CN				X
1160	MONROE, MI	LANG, OH	CN				X
1165	LANG, OH	TOLEDO, OH	CN				X
1170	FLAT ROCK, MI	DIANNIORY, MI	CN				X
1220	MILWAUKEE JCT, MI	DETROIT INTERMODAL, MI	CN				X
1222	DETROIT INTERMODAL, MI	MAL JCT, MI	CN				X
1225	MAL JCT, MI	PONTIAC, MI	CN				X
1230	PONTIAC, MI	WEST PONTIAC, MI	CN				X
1235	WEST PONTIAC, MI	DURAND, MI	CN				X
90				11	6	24	86

### 3.3.2 Rail Yards

Most rail yard activities involve switching and storing individual cars and blocks of cars. Other activities include locomotive maintenance and fueling and freight car inspection, cleaning, and repair. The Applicants expect that the proposed CN/IC Acquisition will cause only minor increases and decreases in train traffic at individual rail yards. Table 3-3, "Rail Yards that Meet or Exceed the Board's Thresholds for Environmental Analysis," lists the five rail yards that SEA studied for this Draft EA with regard to the environmental impact on air quality. All five rail yards exceeded the threshold for air quality analysis only.

**TABLE 3-3  
RAIL YARDS THAT MEET OR EXCEED  
THE BOARD'S THRESHOLDS FOR ENVIRONMENTAL ANALYSIS**

Facility	Location	County	Rail Cars Handled Per Day			
			Pre-Acquisition	Post-Acquisition	Increase	Percent Change
Hawthorne Rail Yard	Cicero, IL	Cook	39	63	24	62
Markham Rail Yard	Homewood, IL	Cook	610	853	243	40
Detroit Rail Yard	Detroit, MI	Wayne	82	133	51	62
Edison Rail Yard	Trenton, MI	Wayne	8	11	3	37.5
Port Huron Rail Yard	Port Huron, MI	St. Clair	8	24	16	200

### 3.3.3 Intermodal Facilities

Intermodal facilities are sites where trains, trucks, and/or ships transfer truck trailers and/or containers. Intermodal facilities include railroad tracks, lifting equipment, paved and/or unpaved areas, and a control point to transfer (receive, load, unload, and dispatch) trailers and containers between rail and other modes of transportation. Increased rail activity at the Moyers Intermodal Terminal (Moyers) in Harvey, Cook County, Illinois would exceed the Board's threshold for air quality and noise. Table 3-4, "Intermodal Facilities that Meet or Exceed the Board's Thresholds for Environmental Analysis," presents information for the Moyers Intermodal Terminal, which SEA studied for the Draft EA.

**TABLE 3-4  
INTERMODAL FACILITIES THAT MEET OR EXCEED  
THE BOARD'S THRESHOLDS FOR ENVIRONMENTAL ANALYSIS**

Facility	Location (City)	County	Trucks Per Day		
			Pre-Acquisition	Post-Acquisition	Increase
Moyers Intermodal Terminal	Harvey, IL	Cook	346	434	88

### **3.3.4 Proposed Construction Projects**

The Applicants propose five new rail construction projects in connection with the proposed CN/IC Acquisition, which SEA studied during preparation of the Draft EA. The first proposed rail construction project is a connection at Cicero, Cook County, Illinois that would handle rail traffic more efficiently at that point. The Applicants state that they would construct this new connection in the southwest quadrant of the intersection of IC and Belt Railway of Chicago (BRC). The new connection would permit additional access between the IC and BRC rail lines and would require approximately 1,000 feet of new track. See Section 5.1.1, "Cicero, Illinois," for a more detailed description of this proposed construction project.

The Applicants propose a second rail construction project at IC's rail yard at Jackson, Mississippi. The Applicants propose to add bypass tracks adjacent to the rail yard at Jackson, Mississippi to allow through trains to bypass the yard. The project would require approximately 2,140 feet of new track. Section 5.1.2, "Jackson, Mississippi," provides a more detailed description of construction activities for this proposed project.

The remaining three construction projects are rail yard modifications within the existing right-of-way in Champaign and Centralia, Illinois and Memphis, Tennessee. The Applicants also plan Acquisition-related construction at these three IC rail yards to improve operational efficiency at those facilities.

### **3.3.5 Proposed Abandonments**

The Applicants have not proposed any abandonments of rail line segments in association with the proposed CN/IC Acquisition.

## **3.4 ALTERNATIVES TO THE PROPOSED ACTION**

When evaluating applications for mergers or acquisitions, the Board considers the Proposed Action, the No-action Alternative, and Inconsistent and Responsive Applications filed by other parties to request modifications or conditions to the proposed action. For its environmental review in this case, SEA considered these alternatives as discussed in sections 3.4.1 and 3.4.2.

### **3.4.1 No-action Alternative**

Under the No-action Alternative, the Board would not approve the CN/IC Acquisition, and the Applicants' proposed changes in rail operations would not occur. Under this alternative, no changes in operations of rail line segments, rail yards, or intermodal facilities would occur as proposed by the Applicants. Similarly, there would be no new construction. Existing traffic levels along rail line segments and at rail yards and intermodal facilities would continue unchanged except for changes resulting from normal railroad business and market conditions. Therefore, none of the anticipated benefits or environmental effects of the proposed action would occur.

### **3.4.2 Inconsistent and Responsive Applications**

Inconsistent and Responsive (IR) Applications are proposals that parties (other than the Applicants) file with the Board to request modifications or conditions to the Primary Application. In its Decision No. 6, served on August 14, 1998, the Board required parties who planned to file IR Applications to file summary descriptions of their requests by August 31, 1998. In its Decision No. 11, served on October 2, 1998, the Board announced a revised procedural schedule that required IR Applicants to file complete IR Applications by October 27, 1998. The Board received three IR Applications relating to the proposed CN/IC Acquisition.<sup>11</sup> IR Applicants in this proceeding typically sought one or more of the following: trackage rights over, acquisition or control of, or conditions relating to, particular rail lines that were included in the Primary Application. (See Table 3-5, "Inconsistent and Responsive Applications," for more information.)

In Decision No. 6, the Board also required that the IR Applicants file one of the following by September 21, 1998: (1) a Verified Statement that the IR conditions or modifications being sought would have no significant environmental effects, or (2) a responsive environmental report (RER) containing detailed information on the potential environmental effects of the conditions or modifications being sought. The Board required IR Applicants to file an RER if the requested relief, when added to the activities proposed by the Primary Application, would increase activities along a rail segment or at a rail yard by levels that would meet or exceed the Board's threshold for environmental analysis. All three IR Applicants filed Verified Statements, and SEA used these Verified Statements to analyze the potential environmental effects of the IR Applications. The three Verified Statements are included in Appendix R, "List of Inconsistent and Responsive Applications: Verified Statements."

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<sup>11</sup> Initially, two other railroads (CSX and Norfolk Southern) filed summary descriptions. On October 27, 1998, NS instead filed a request for conditions, which is described in Table 3-6, "Summary of Requests for Conditions." CSX withdrew its IR Application in light of a settlement agreement with CN. The terms of the trackage rights agreement are currently unknown, but SEA will analyze them in the Final EA if they meet any Board thresholds for environmental review.

**TABLE 3-5  
INCONSISTENT AND RESPONSIVE APPLICATIONS**

Name of Applicant	Summary of Application	Summary of Verified Statement
Burlington Northern & Santa Fe Railway Co. (BNSF)	BNSF seeks: (1) overhead trackage rights on CN to permit direct interchange with British Columbia Railway at Vancouver, B.C.; (2) trackage rights on IC track between BNSF's Corwith and Cicero Yards in Chicago; (3) access, via overhead trackage or haulage rights, to three plants at Geismor, Louisiana; (4) other trackage rights as necessary due to loss of competition from Application and Access and Alliance Agreement with The Kansas City Southern Railway Company (KCSR).	BNSF states that the trackage rights and access being requested would not result in changes in rail operations that would exceed any of the Board's environmental analysis thresholds. No new construction would be necessary, and little or no additional maintenance of railroad property would be necessary.
Canadian Pacific Railway Company (CP)	CP requests a condition requiring CN to divest its 50% share of the Detroit River Tunnel in Michigan. Canadian National (CN) and CP own the Detroit River Tunnel, which is too low in clearance to handle double-stack container trains. CN owns the St. Clair Tunnel, which is a double-stack tunnel. CP states that it would be at a competitive disadvantage in North American Free Trade Agreement (NAFTA) traffic because CN could block investment to upgrade the Detroit River Tunnel. In addition, CN's consent would be required for construction of a replacement track or for use of the approached trackage or right-of-way by CP (or a third party in building a new tunnel).	CP states that the Application would result in a change in ownership of the Detroit River Tunnel Company (DRTC). The change in ownership would not result in any material change in rail operations through the Detroit River Tunnel (DRT). As a result, the proposed change in ownership of the DRT would not result in any adverse environmental effects.
Ontario-Michigan Rail Corp. (OMR)	OMR seeks to acquire CN's interest in the CN/CP Niagara-Detroit Partnership, owner of the existing Detroit River Tunnel between Detroit, Michigan and Windsor, Ontario. OMR would build a high-clearance tunnel immediately adjacent to the existing tunnel. According to OMR, they need the Board to allow them to acquire CN's tunnel interest in order to permit OMR to build and operate the immediately adjacent high-clearance tunnel.	OMR states that the proposed acquisition of the Detroit Tunnel would result in no significant changes in railroad activity and would not exceed the Board's thresholds for environmental analysis.

### 3.4.3 COMMENTS AND REQUESTS FOR CONDITIONS

In addition to the IR applications discussed in Section 3.4.2, the Board received comments and requests for conditions (CRCs) by the October 27, 1998 deadline set out in the Board's Decision No. 11. CRCs were received from a wide variety of parties, including shippers, railroads, labor unions, and elected officials. Some of the comments were general in nature, did not contain Requests for Conditions, and were unlikely to cause environmental effects. Table 3-6, "Summary of Requests for Conditions," presents the CRCs that included requested conditions that would result in environmental effects and the potential environmental effects of the conditions requested.

**TABLE 3-6  
SUMMARY OF REQUESTS FOR CONDITIONS**

<b>Filer/Commenter</b>	<b>Title of Filing</b>	<b>Condition(s) Requested</b>	<b>Potential Environmental Effects</b>
American Forest and Paper Association	Comments and Request for Conditions	<ul style="list-style-type: none"> <li>Eliminate "paper-barriers" that restrict access to or from Class III short-line carriers that connect with CN or IC.</li> <li>Allow for increased switching opportunities and alternatives.</li> </ul>	Resulting change in location or volume of train traffic and potential environmental effects are unknown at this time.
City of Chicago, Illinois	Comments and Request for Conditions	<ul style="list-style-type: none"> <li>Establish an alternate route through Chicago to link Wisconsin Central's Superior, MN line, IC's Council Bluffs and Joliet lines with IC's New Orleans line and CN's Detroit line that (a) has no highway or street crossings at grade, and (b) does not enter the downtown area of Chicago.</li> <li>Reroute all traffic moving on the IC line (which includes the St. Charles Air Line) through the city of Chicago to or from Wisconsin Central's Superior, MN line, IC's Council Bluffs, Joliet, and New Orleans lines, and CN's Detroit line, where that route is reasonably direct and operationally feasible.</li> </ul>	Construction and operational impacts could be associated with reopening a line through residential and industrial areas and using other carriers' main lines for rerouting the existing non-acquisition-related 13 trains per day on the IC line. (There would be no Acquisition-related increase in the number of trains per day on the current IC line.)
Exxon Chemical Americas	Comments	<ul style="list-style-type: none"> <li>Grant another Class I railroad direct access to Exxon's plants in Baton Rouge.</li> </ul>	Resulting change in location or volume of train traffic and potential environmental effects are unknown at this time.
National Industrial Transportation League and Fertilizer Institute	Comments and Request for Conditions	<ul style="list-style-type: none"> <li>Require that the Marketing Alliance will not apply to any shipper that now or in the future has or may obtain access to both KCSR and the merged CN/IC, including shippers that may seek or obtain competitive rail service by means of build-ins, build-outs or by all other means of competitive access.</li> <li>Provide for limited oversight to ensure above condition.</li> </ul>	Resulting change in location or volume of train traffic and potential environmental effects are unknown at this time.
National Railroad Passenger Corporation (Amtrak)	Comments and Request for Condition	<ul style="list-style-type: none"> <li>Board should retain oversight for 5 years of the effect of the acquisition on on-time performance of Amtrak on CN/IC line.</li> </ul>	None.



**TABLE 3-6**  
**SUMMARY OF REQUESTS FOR CONDITIONS**

Filer/Commenter	Title of Filing	Condition(s) Requested	Potential Environmental Effects
Norfolk Southern Railway Company	Comments and Verified Statements	<ul style="list-style-type: none"> <li>Address rail line capacity and infrastructure needs on IC's Chicago-Gilman-Gibson City line.</li> <li>Attempt to negotiate with NS a plan to address rail line capacity and infrastructure needs in the Springfield, IL area, including NS trackage that is the subject of the "related" terminal trackage rights application in STB Finance Docket No. 33556 (Sub-No. 1).</li> <li>Attempt to negotiate with NS a plan to address rail line capacity and infrastructure needs on IC and NS facilities in the vicinity of the connection between IC and NS at Tolono, Illinois.</li> <li>Amend Settlement Agreements with KCS to include in each such agreement the provision that the quality of services provided by KCSR to NS and its customers over KCSR's Meridian, MS-Dallas, TX and Meridian, MS-Port Arthur, TX lines shall be at least equal to quality of services that KCSR provides for similar movements of its own traffic and similar movements of CN/BC traffic over these lines.</li> <li>Attempt to negotiate with NS a plan to address rail line capacity and infrastructure needs on IC's lines in the Jackson, MS area.</li> </ul>	None.
Occidental Chemical Corp.	Comments and Requests for Conditions	<ul style="list-style-type: none"> <li>Clarify the provisions of the Alliance Agreement to ensure that the Agreement shall not apply to situations where a shipper obtains direct access to more than one Alliance carrier. This would preserve Occidental Chemical's existing opportunity to obtain future competition via a build-in or build-out to a rail line owned and operated by another Alliance carrier.</li> </ul>	Resulting change in location or volume of train traffic and potential environmental effects are unknown at this time.
Ruhicon, Inc. and Uniroyal Chemical Company, Inc.	Comments and Requests for Conditions	<ul style="list-style-type: none"> <li>Eliminate anti-competitive effects of the Access Agreement by extending Access Agreement to these two facilities.</li> </ul>	Resulting change in location or volume of train traffic and potential environmental effects are unknown at this time.

**TABLE 3-6  
SUMMARY OF REQUESTS FOR CONDITIONS**

Filter/Commenter	Title of Filing	Condition(s) Requested	Potential Environmental Effects
Union Pacific Railroad Company	Comments of Union Pacific Railroad Co.	<ul style="list-style-type: none"> <li>Grant haulage rights on IC's line between Baton Rouge and New Orleans.</li> <li>Deny Applicants request to override UP's contractual rights through a grant of terminal trackage rights or application of Section 11321(A).</li> </ul>	<p>Resulting change in location or volume of train traffic and potential environmental effects are unknown at this time.</p> <p>Would eliminate projected CN/IC Acquisition-related traffic of 1.4 trains per day on the segments between Galesburg and Springfield, Illinois.</p>

While most of the CRCs focus on the competitive aspects of the merits of the proposed Acquisition, some requested conditions may have potential environmental effects. Pursuant to the Revised Procedural Schedule published in the Board's Decision No. 11, responses to the IR Applications and CRCs are not due from the Applicants until December 11, 1998. Therefore, SEA will continue to consider the environmental issues raised in the CRCs until the Final EA is published.

### **3.5 RELATED ACTIONS**

In its environmental review, SEA considered actions related to the proposed CN/IC Acquisition. The following sections describe the related actions SEA considered. These actions are as discussed in greater detail in Chapter 6, "Environmental Consequences—Cumulative Effects."

#### **3.5.1 Alliance and Access Agreements with KCSR**

CN and IC have entered into two agreements with The Kansas City Southern Railway Company (KCSR). Both agreements would increase the levels of rail activity along rail line segments and at rail yards following the proposed Acquisition. The Operating Plan that the Applicants submitted to the Board reflects these increases on the proposed CN/IC system, and SEA reviewed the potential environmental effects of these traffic changes in the Draft EA. SEA also reviewed the potential cumulative effects associated with these changes on the KCSR system. (For more information, refer to Chapter 6, "Environmental Consequences—Cumulative Effects.")

The first of the agreements, a marketing Alliance, is independent of the proposed CN/IC Acquisition and will continue for at least 15 years, regardless of the Board's decision on the proposed CN/IC Acquisition. CN, IC, and KCSR formally entered into this Alliance on April 15, 1998, to improve interline service among these three railroads and link freight rail services for existing and potential customers through market development and expansion. The Alliance targets shippers who move freight north and south between Canada and Mexico and through the U.S. markets of Detroit, Michigan; Chicago, Illinois; Kansas City, Missouri; St. Louis, Missouri; Memphis, Tennessee; Dallas, Texas; and Houston, Texas. Although the Alliance is not dependent on the proposed CN/IC Acquisition, the Applicants have indicated that the Alliance will not be as beneficial to shippers or the railroads without the service improvements and efficiencies fostered by the proposed CN/IC Acquisition.

The Alliance provides for coordination among the three railroads regarding sales and marketing, operations, fleets, and information systems. The Alliance proposes to offer shippers competitive access. The Applicants and KCSR have also agreed that they will not coordinate shipping services in accordance with the Alliance where any two of the railroads provide the only direct rail service. To coordinate activities in the United States, the parties have agreed to establish Springfield, Illinois and Jackson, Mississippi as the principal interchange points between the railroads and to provide for the joint operation of yards and facilities in Jackson, Mississippi.

In addition to the Alliance, CN and KCSR entered into an Access Agreement on April 15, 1998. This agreement, which would become effective upon Board approval of the proposed CN/IC Acquisition, would grant certain haulage and trackage rights from CN/IC to KCSR, and it would provide for potential investment in joint facilities and long-term access to those facilities following development by a management group consisting of representatives of the three railroads. Specifically, CN would grant KCSR access and haulage rights between three chemical plants at Geismar, Louisiana (now served by IC) and Baton Rouge, Louisiana as well as from Baton Rouge to Jackson. The Applicants' Operating Plan includes traffic changes on CN and IC lines and facilities that would result from the Access Agreement, and SEA's environmental analysis also considers those changes.

### **3.5.2 Haulage Agreement with Wisconsin Central Limited**

CN does not own rail lines between Duluth, Minnesota/Superior, Wisconsin and Chicago, Illinois. Since September 1997, Wisconsin Central Limited (WC) has carried CN's intermodal traffic between Duluth/Superior and Chicago in accordance with a haulage rights agreement between CN and WC. Until August 31, 1998, The Burlington Northern Santa Fe Railway Company (BNSF) carried CN's carload and bulk traffic between those points in accordance with a haulage agreement that CN had with that railroad. However, as of September 1, 1998, WC now hauls, under the terms of a new haulage agreement between CN and WC, all CN traffic formerly handled by BNSF between Duluth/Superior and Chicago. That agreement, unrelated to the CN/IC Acquisition, will continue in effect for 20 years. However, SEA considered the potential cumulative effects of this Agreement. (For more information on cumulative effects, please refer to Section 6.1, "Environmental Consequences—Cumulative Effects.")

### **3.5.3 Rail Connection at Harvey, Illinois**

Before submitting their Application, CN and IC planned to upgrade an existing connection between their lines at Harvey, Cook County, Illinois to improve the traffic flow between the CN and IC lines at that location. SEA reviewed the Applicants' plans and verified that the construction project at Harvey was previously planned. However, SEA considered the potential cumulative effects of this project. (For more information on cumulative effects, please refer to Section 6.1, "Environmental Consequences—Cumulative Effects.")

## **3.6 SCOPE OF ENVIRONMENTAL REVIEW**

SEA evaluated the environmental effects of the proposed CN/IC Acquisition for the following issue areas:

- Safety, including freight rail operations, passenger rail operations, and hazardous materials transport safety.
- Highway/Rail At-grade Crossings, including safety, delay, and emergency response delay.
- Transportation Systems, including highways and local roadways.

- Passenger Rail Operations Capacity.
- Navigation.
- Energy.
- Air quality.
- Noise.
- Environmental justice.
- Cumulative Effects.

In its review of construction activities, SEA evaluated environmental effects in the following issue areas:

- Hazardous Materials Spill Sites and Hazardous Waste Sites.
- Traffic and Roadway Systems.
- Natural Resources.
- Air Quality.
- Noise.
- Environmental Justice.
- Land Use.
- Cultural Resources.

SEA also reviewed and evaluated the Applicants' Safety Integration Plan, which describes how the Applicants would safely merge the existing CN and IC systems. Chapter 7, "Safety Integration Plan," presents a discussion of the Plan, and Appendix V, "Safety Integration Plan," presents the entire Plan. SEA encourages the public to participate in the environmental review by commenting on the Draft EA and Safety Integration Plan during the 30-day comment period. (Refer to Section 1.4, "How to Submit Environmental Comments.")

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## **CHAPTER 4**

### **ENVIRONMENTAL CONSEQUENCES—OPERATIONAL CHANGES**

Chapter 4 presents the Surface Transportation Board (the Board), Section of Environmental Analysis (SEA) evaluation of the potential environmental effects resulting from operational changes (i.e., increased activities over rail lines and at intermodal facilities and rail yards) of the proposed Canadian National Railway Company and Illinois Central Corporation (CN/IC) Acquisition. Chapter 5, "Environmental Consequences—Construction Projects," describes SEA's evaluation of Acquisition-related construction projects.

The proposed CN/IC Acquisition is an end-to-end coupling of the existing CN and IC systems. While the resulting CN/IC system would cover approximately 18,670 miles, only approximately 4,520 miles would be in the United States, which is the focus of SEA's environmental review. The new system would be "Y-shaped" with its hub in Harvey, Illinois south of Chicago. The Applicants anticipate relatively minor changes in operations as a result of the proposed Acquisition. Their Operating Plan states that none of the Applicants' proposed increases in rail activity on rail line segments would exceed eight trains per day, which is the Board's threshold for environmental analysis for some of the issue areas the Board considers in conducting its environmental review. The Applicants have proposed no rail line abandonments and only five minor construction projects (one rail line connection and four rail yard bypass tracks). SEA identified 11 rail line segments, five rail yards, and one intermodal facility that met the Board's thresholds for air quality or noise analysis in this case. These facilities are located in Illinois and Michigan.

SEA conducted a thorough and comprehensive analysis of potential environmental effects for the following issue areas: safety, including freight rail operations, passenger rail operations, and hazardous materials transport safety; highway/rail at-grade crossings, including safety, delay, and emergency response delay; transportation systems, including highways and local roadways; passenger rail operations capacity; navigation; energy; air quality; noise; and environmental justice. With the exception of hazardous materials transport, SEA determined that none of these issue areas would have a potential for significant effects and therefore do not warrant mitigation. With respect to hazardous materials transport, SEA developed mitigation to address Acquisition-related increases in hazardous materials transportation, which includes tailored mitigation to address potential disproportionately high and adverse impacts in environmental justice communities. SEA believes that with this recommended mitigation, no potential for significant environmental effects exists.

As it did in the recent Conrail Acquisition, the Board also required the Applicants to submit a detailed Safety Integration Plan, developed within guidelines set by the Federal Railway Administration (FRA), that specifically addresses the process of combining and integrating the

two rail systems into one if the Board approves the proposed CN/IC Acquisition. SEA has reviewed the Safety Integration Plan. Chapter 7, "Safety Integration Plan," discusses the content of the Safety Integration Plan. FRA has provided comments on the Safety Integration Plan. In addition, the Board has entered into a Memorandum of Understanding (MOU) with FRA, with the concurrence of the U.S. Department of Transportation (DOT), to establish an ongoing monitoring process during implementation of the proposed CN/IC Acquisition. The Applicants' Safety Integration Plan, FRA's comments, and the MOU are included in Appendix V, "Safety Integration Plan," to allow for public review and comment. SEA recommends as preliminary mitigation that the Applicants be required to comply with the Safety Integration Plan and fully participate in the ongoing safety integration process provided for in the MOU.

In performing its environmental analysis, SEA used the Applicants' Application and Operating Plan<sup>12</sup> to identify projected changes that could result in potential environmental impacts in rail traffic on rail line segments and activity at rail yards and intermodal facilities. Moreover, in a letter dated June 18, 1998, the Applicants requested that SEA conduct a modified environmental review process from previous railroad acquisitions whereby the Applicants would submit a Preliminary Draft Environmental Assessment (PDEA) instead of an Environmental Report. SEA approved this approach. In Board Decision No. 5 on June 23, 1998, the Board directed the Applicants to prepare a PDEA under the guidance and direction of SEA. (See Appendix Q, "Relevant Board Decisions.") Throughout the Applicants' preparation of the PDEA, SEA directed the environmental analysis methodologies for each issue area, reviewed and verified preliminary analysis results, and directed modifications to the PDEA. In cases where SEA did not concur with the Applicants' approach, SEA directed the Applicants to modify their analysis or conducted its own independent analysis. After the Applicants submitted the PDEA on August 31, 1998 and revisions on September 9, 1998, SEA used the PDEA as an internal working document to prepare the Draft EA. Also, in preparing this Draft EA, SEA conducted appropriate environmental analysis and reviewed supplemental data from the Applicants. In addition, SEA developed the preliminary environmental mitigation measures set forth in Chapter 8, "SEA's Preliminary Recommended Environmental Mitigation." The remainder of Chapter 4 presents SEA's preliminary analysis results and conclusions.

In conducting its environmental analysis, SEA first applied the Board's thresholds for environmental analysis at 49 CFR Part 1105. The Board thresholds apply specifically to air quality and noise. For issue areas where the Board does not have specific thresholds for environmental analysis, SEA assessed whether it would be appropriate to apply thresholds developed for the recent Conrail Acquisition.<sup>13</sup> See Chapter 3, "Project Description," for a description of the Board's thresholds for environmental analysis in this case and a description of the activities meeting these thresholds. SEA concluded that the analysis thresholds developed for

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<sup>12</sup> SEA also incorporated the minor corrections to the Applicants' Operating Plan submitted as errata on September 15, 1998.

<sup>13</sup> Surface Transportation Board, Section of Environmental Analysis. *Final Environmental Impact Statement, CSX Corporation and CSX Transportation, Inc., Norfolk Southern Corporation and Norfolk Southern Railway Company—Control and Operating Leases/Agreements—Conrail Inc. and Consolidated Rail Corporation*, STB Finance Docket No. 33388, May 1998.



the Conrail Acquisition were also appropriate for environmental analysis of the proposed CN/IC Acquisition.

For each environmental issue area, SEA presents:

- Summary of Issue.
- Board Thresholds for Analysis, where appropriate.
- Methods.
- Criteria of Significance.
- Existing Conditions.
- Analysis Results.
- SEA's Preliminary Conclusions.

#### **4.1 FREIGHT RAIL OPERATIONS SAFETY**

SEA evaluated whether Acquisition-related increases in rail activity would affect freight rail operations safety or highway safety. SEA measured the potential change in these types of accidents by calculating:<sup>14</sup>

1. The potential increase in accident frequencies on individual rail line segments.
2. The potential increase in system-wide accident frequency.
3. The potential increase in highway accidents resulting from highway-to-rail diversions the Applicants project in their Operating Plan.

In its evaluation of individual rail line segments, SEA found that none of the rail line segments in the proposed CN/IC would experience rail activity levels that would meet or exceed the Board's thresholds for environmental analysis. Therefore, SEA concludes that no potential exists for significant environmental effects on freight rail operations over individual rail line segments.

SEA determined the proposed CN/IC Acquisition would decrease predicted freight rail accidents over the entire system and decrease predicted highway accidents. Sections 4.1.1, "Freight Rail Operations Safety: System-wide Analysis," and 4.1.2, "National and Regional Highway System Safety Effects," present the Board's thresholds for analysis, SEA's evaluation methods, existing conditions, and the results of SEA's analysis for these issue areas.

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<sup>14</sup> For the purpose of this evaluation, SEA defined freight train accidents to include freight train collisions with other trains, derailments, and reportable train-vehicle accidents at highway/rail at-grade crossings. SEA addresses reportable train-vehicle accidents in Section 4.5, "Highway/Rail At-grade Crossing Safety."

#### 4.1.1 Freight Rail Operations Safety: System-wide Analysis

<b>Summary of Issue</b>	SEA evaluated whether changes in rail activity across the U.S. portion of the proposed CN/IC system would increase the risk of a freight rail accident.
<b>Board Thresholds for Analysis</b>	For this system-wide analysis, SEA considered changes in rail activity over all of the rail segments in the U.S. portion of the proposed system.
<b>Criteria of Significance</b>	For this issue, SEA did not develop criteria of significance because the analysis showed that post-Acquisition accident frequencies would decline.
<b>Methods</b>	This section presents background information on freight rail safety considerations and the method SEA used to conduct its analysis of this issue.

**Background.** DOT's FRA has primary responsibility for the enforcement of railroad safety regulations. Whenever a collision, derailment, or other accident occurs, FRA regulations require a railroad to report the incident to FRA if the property or personal injury damages from the incident exceed \$6,500 (1997 FRA reporting threshold).<sup>15</sup> In addition, a railroad must report all train-vehicle accidents to FRA, regardless of the severity. FRA maintains databases with details about the types and locations of accidents reported.

**Method.** SEA analyzed potential freight rail operations safety issues using accident history data from 1995 to 1997 accident rates from the FRA Accident/Incident Bulletin, and information from DOT and the Association of American Railroads (AAR). SEA supplemented the data with information about anticipated changes in the level of rail operations as described in the Applicants' Operating Plan.

The general approach that SEA used to evaluate the potential safety risks of the estimated increases in freight train traffic follows:

- Calculate historical accident rates, expressed in freight train accidents per million train-miles. A train-mile is the movement of a train for a distance of 1 mile.

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<sup>15</sup> 49 CFR 225.

- Apply historical accident rates to the Applicants' estimated freight train activity to predict accident frequencies after the proposed CN/IC Acquisition.

SEA used a weighted average of the individual CN and IC historical accident rates from 1995 through 1997 to estimate the number of accidents that could occur on the integrated CN/IC rail system after the proposed CN/IC Acquisition. To calculate the average, SEA computed the total number of accidents for CN and IC during the 3-year period and the total number of train-miles traveled by CN and IC during the same period. SEA averaged the total number of accidents over the total number of train-miles for CN and IC. SEA calculated the number of accidents that could occur after the proposed CN/IC Acquisition, based on estimated train activity from the Applicants' Operating Plan. Appendix C, "Safety Analysis Methods and Results," provides details about the calculations.

#### Existing Conditions

Both CN and IC maintain records of the number of accidents that occur per mile of train travel (i.e., train-mile). In 1997, CN's accident rate was 4.07 accidents per million train-miles (accidents meeting FRA reporting thresholds). IC's accident rate for 1997 was 7.04 accidents per million train-miles (accidents meeting FRA reporting thresholds). The 1997 rates for CN and IC have improved from previous years. The accidents that the Applicants record include all FRA-reportable accidents on mainlines, at rail yards and intermodal facilities, and at highway/rail at-grade crossings. Table 4-1, "Accident Rates and Train-Miles for CN and IC 1995 Through 1997," shows the annual number of train-miles, accident rates, and total accidents for CN and IC from 1995 through 1997.

**TABLE 4-1  
ACCIDENT RATES AND TRAIN-MILES FOR CN AND IC  
1995 THROUGH 1997**

Year	CN			IC		
	Train-Miles (millions)	Accidents per million Train-Miles	Total Accidents	Train-miles (millions)	Accidents per million Train-Miles	Total Accidents
1995	5.80	8.79	51	9.48	8.12	77
1996	6.13	5.88	36	8.95	9.83	88
1997	6.38	4.07	26	9.09	7.04	64

## Analysis Results

SEA estimated an average annual accident rate for the integrated CN/IC rail system by analyzing the number of accidents that occurred on CN and IC rail lines between 1995 and 1997. The result was a combined CN/IC accident rate of 7.46 accidents per million train-miles. The Applicants' Operating Plan indicated that the total annual number of train-miles for the integrated CN/IC rail system would be approximately 13.75 million train-miles after the proposed CN/IC Acquisition. SEA used the combined CN/IC 1995 through 1997 accident rate and the estimated number of train-miles provided in the Applicants' Operating Plan to project that 103 accidents could occur annually after the proposed CN/IC Acquisition. For comparison, the national accident frequency rate on all railroads is 3.85 accidents per million train-miles. For Class 1 railroads as a group, the rate is 3.67 accidents per million train-miles. The rate includes all accidents on mainline tracks and at yards.<sup>16</sup> Table 4-2, "System-wide Accident Frequencies for Pre-Acquisition and Post-Acquisition Rail Systems," shows the system-wide number of freight-rail accidents that SEA predicts could occur as a result of the proposed CN/IC Acquisition.

**TABLE 4-2  
SYSTEM-WIDE ACCIDENT FREQUENCIES  
FOR PRE-ACQUISITION AND POST-ACQUISITION  
RAIL SYSTEMS**

	Total Train-Miles (millions)	Accidents per Million Train-Miles	Accidents per Year
1995 CN/IC (Actual)	15.28	8.38	128
1996 CN/IC (Actual)	15.08	8.22	124
1997 CN/IC (Actual)	15.47	5.82	90
Integrated CN/IC System (Predicted)	13.75	7.46	103

The number of accidents that SEA estimated for the first year of integrated CN/IC operations is higher than the number of accidents that actually occurred on the CN and IC rail lines in 1997, for two reasons. First, the integrated CN/IC rail line system could have more train traffic (i.e., freight diverted from other railroads and from trucks to rail), resulting in a potential increase in the total number of annual train-miles. Second, SEA calculated an average

<sup>16</sup> U.S. Department of Transportation, Federal Railroad Administration. Railroad Accident/Incident database, 1993 through 1997.

accident rate based on 3 years of operations. Both CN and IC showed marked improvement in their accident rates in 1997, so the 3-year accident rate may overestimate the number of accidents. The Applicants indicate in their Safety Integration Plan that they expect their downward trend in accident rates to continue after the proposed CN/IC Acquisition. Chapter 7, "Safety Integration Plan," discusses the steps that CN and IC would take to combine their safety efforts after the proposed CN/IC Acquisition.

**SEA's Conclusions**

SEA concludes that the proposed CN/IC Acquisition would not result in any significant impact to system-wide freight operations safety.

**4.1.2 National and Regional Highway System Safety Effects**

**Summary of Issue**

The Applicants state that shippers would divert freight from trucks to the integrated CN/IC rail transport system because the consolidated system would be more cost-effective than highway shipment. With fewer freight trucks traveling on highways, the Applicants predict that fewer freight truck accidents would occur.

**Board Thresholds for Analysis**

SEA evaluated the overall changes in safety on national and regional highway systems. The Board's thresholds do not apply to this analysis.

**Methods**

The Applicants' Operating Plan includes information about the predicted reduction in highway truck-miles in each affected state as a result of the proposed CN/IC Acquisition. Using the decrease in truck-miles that freight trucks would travel after the proposed CN/IC Acquisition, SEA calculated the potential reduction in number of injuries and deaths by multiplying the reduction in truck-miles by 1996 accident rates published by DOT's National Highway Traffic Safety Administration (NHTSA).<sup>17</sup>

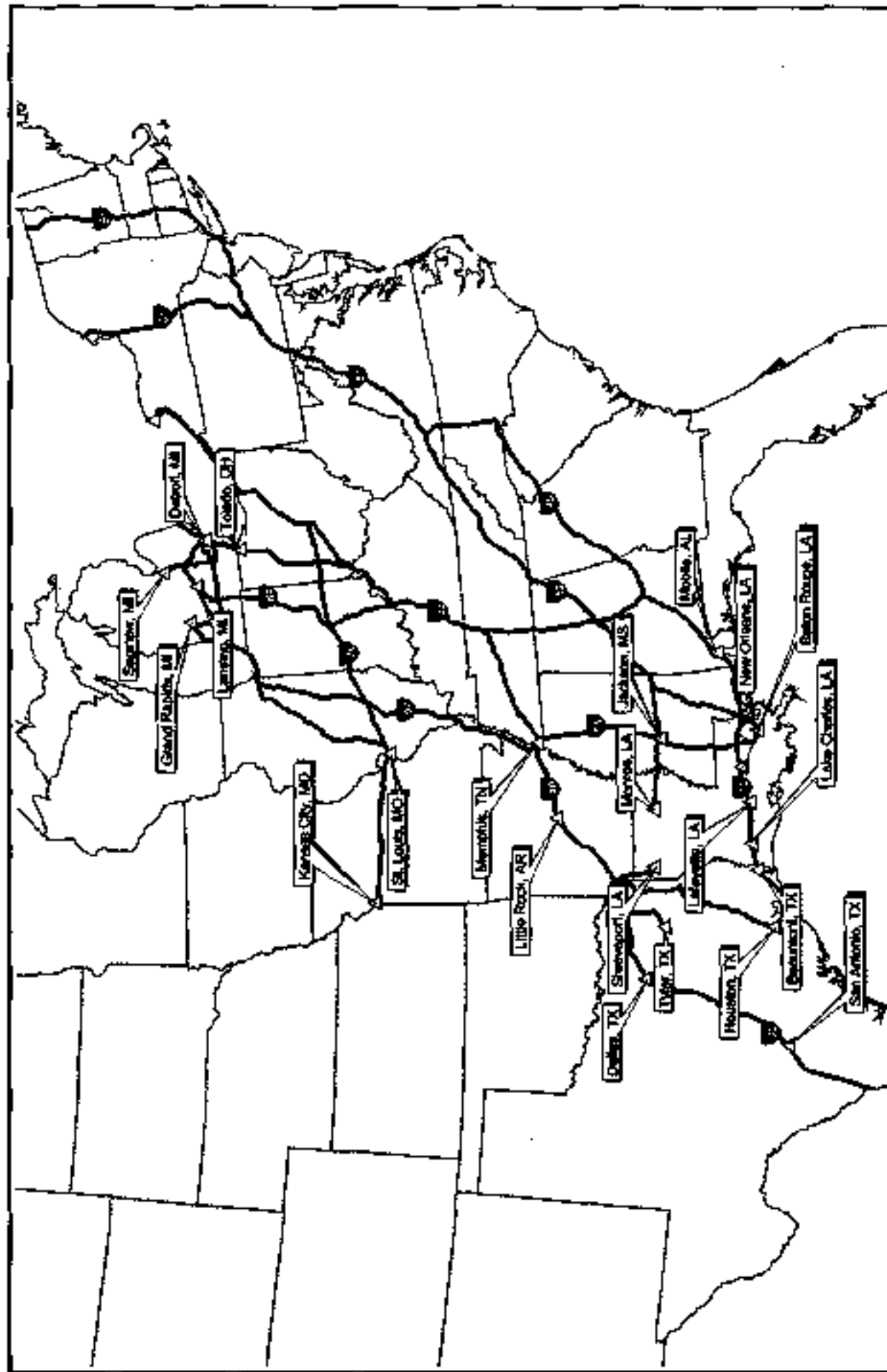
**Criteria of Significance**

For this issue, SEA did not develop criteria of significance because the proposed CN/IC Acquisition would result in a reduction in truck-miles traveled.

**Existing Conditions**

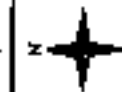
SEA identified 24 states where the proposed CN/IC Acquisition has the potential to affect the highway system. Figure 4-1, "Truck-to-Rail Diversion, Affected Highway Corridors," shows the location of these affected highway corridors.

<sup>17</sup> U.S. Department of Transportation, National Highway Traffic Safety Administration. *Traffic Safety Facts 1996*, Table 3.



Draft Environmental Assessment

Proposed Acquisition  
Canadian National and Illinois Central



90 0 90 180 Miles

Figure 4-1  
Truck-to-Rail Diversions,  
Affected Highway Corridors

△ City  
— Highways Affected

Sources: Geographic Data Technology

Section 4.7.1, "National and Regional Highway System Traffic and Roadway Effects," discusses the location of the highways on which truck-to-rail diversions would occur. Because SEA examined long-haul truck traffic generally, it considered effects that span many states, even states where CN and IC do not currently have facilities.

## Analysis Results

**Highway System Accident Frequencies.** SEA estimated the system-wide safety effects of fewer freight trucks on the highway if it were more cost-effective to ship freight by rail than by truck after the proposed CN/IC Acquisition. Based on the Applicants' Operating Plan, SEA estimated that truck-to-rail diversions would result in an annual reduction of 28,085 truck loads of freight from major U.S. highways (about 5 percent of the total highway loads between Quebec, Ontario, Michigan, and markets in the south central U.S.).<sup>18</sup>

Diversion of freight shipments from highway to rail could result in 15.54 fewer injuries, 0.79 fewer fatalities, and 49.36 fewer property damage accidents per year. SEA predicted roadways in 373 counties in 24 states could have reductions in the number of personal injuries, fatalities, and property damage accidents resulting from the proposed CN/IC Acquisition. Appendix C, "Safety Analysis Methods and Results," Attachment C-2, "Estimated Reductions in Injuries, Fatalities, and Property Damages as a Result of Highway-to-rail Freight Diversion," shows the analysis results where the proposed CN/IC Acquisition would potentially reduce highway accidents. The following states contain potentially affected highways:

- |                |                   |
|----------------|-------------------|
| • Alabama.     | • Mississippi.    |
| • Arkansas.    | • North Carolina. |
| • Connecticut. | • New Jersey.     |
| • Georgia.     | • New York.       |
| • Illinois.    | • Ohio.           |
| • Indiana.     | • Pennsylvania.   |
| • Kentucky.    | • South Carolina. |
| • Louisiana.   | • Tennessee.      |

<sup>18</sup> Bryan, Joseph G. B. *Verified Statement in Railroad Control Application*, Volume 2, 1998, pp. 66-101.

- |                  |                  |
|------------------|------------------|
| • Massachusetts. | • Texas.         |
| • Maryland.      | • Vermont.       |
| • Michigan.      | • Virginia.      |
| • Missouri.      | • West Virginia. |

SEA predicts that fewer freight truck accidents would occur as a result of the proposed CN/IC Acquisition because of the expected decrease in freight trucks traveling on highways.

**Accident Frequency Comparisons.** SEA also compared the potential decrease in highway accidents against the potential increase in freight rail accidents. SEA concluded that fewer highway accidents could occur as a result of the diversion of freight shipments from highway to rail as a result of the proposed CN/IC Acquisition. Nationwide, 15.54 fewer incidents involving injuries, 0.79 fewer accidents involving fatalities, and 49.36 fewer accidents involving property damage could occur. The total number of freight highway accidents could be reduced by 65.70 accidents per year.

SEA determined that freight trains would travel 0.34 million additional train-miles on the integrated CN/IC rail system during the first year following implementation of the proposed CN/IC Acquisition. Therefore, only 2.54 additional accidents would occur on the CN/IC system as a result of additional train traffic attributable to the Acquisition (at the predicted accident rate of 7.46 accidents per million train-miles).

#### **SEA's Conclusions**

SEA concludes that the proposed CN/IC Acquisition would diminish the predicted risk of accidents on the national highway system and result in a slight overall improvement in safety.

## **4.2 HAZARDOUS MATERIALS TRANSPORT SAFETY**

The main safety concern in transporting hazardous materials on rail lines is the possibility of a spill, which is also called a "release." SEA evaluated:

1. Whether increases in transport of hazardous materials on rail line segments would increase to a level significant enough to warrant imposing measures to improve safety and protect human health. To measure these potential effects, SEA evaluated the following:



- Whether a rail line segment would become either a new Key Route or a Major Key Route.<sup>19</sup>
  - Whether the volume of ozone-depleting materials transported by CN/IC would significantly change after the proposed CN/IC Acquisition.
2. Whether the risk of a hazardous materials release would increase on individual rail line segments or in the overall proposed CN/IC system.
  3. Whether increases in handling of hazardous materials during switching operations at rail yards and intermodal facilities would be substantial enough to warrant additional measures to improve safety and protect human health.

SEA concludes that as a result of the proposed CN/IC Acquisition:

- The number of new Key Routes and Major Key Routes would increase in the states of Illinois, Kentucky, and Michigan. SEA is recommending mitigation to address these potentially significant environmental impacts.
- The volume of ozone-depleting materials transported by CN/IC would decrease; therefore, SEA is not recommending mitigation measures.
- The change in risk of a mainline release would not be significant; therefore, SEA is not recommending mitigation measures.
- The risk of a release at rail yards would not be significant and does not warrant investigation or mitigation. In any event, the Applicants will implement, as part of their Safety Integration Plan, measures to improve safety at all IC rail yards.

**Background.** A tank car is a special type of freight car that shippers use to ship liquids and liquefied gases in bulk quantities. Sometimes hazardous materials are hauled in tank cars. DOT has special rules for tank cars and the shipment of hazardous materials by rail. The Applicants (like all railroads) must comply with laws and regulations governing the safe transport of hazardous materials. These include: (1) DOT regulations administered by FRA; (2) the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA); and (3) the Resource Conservation and Recovery Act of 1976 (RCRA). The Applicants must also comply with FRA regulations governing track and signal safety standards, locomotive and freight car standards, and operating rules and practices—all of which affect the potential for releases of hazardous materials.

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<sup>19</sup> "Key Route" is a designation the railroad industry developed to identify routes that carry more than 10,000 carloads per year of hazardous materials and thus warrant additional safety measures. "Major Key Route" is a term SEA developed to identify rail line segments where the volume of hazardous materials transported would double and exceed 20,000 carloads per year and thus warrant greater safety measures than Key Routes.

Tank car releases of hazardous materials can occur because of accidents, human error, packaging failure, and other problems. Accidents that can result in a release include derailments, collisions, and fires. Human errors, such as not closing a valve tightly or overfilling a tank, can cause a release. Packaging failures include situations where inner liners are compromised or containers leak. Other sources of releases include vandalism, improperly vented tank cars, and materials incompatibility.

DOT regulations require the railroads to submit a report each time a release occurs. These reports, which the railroads submit to DOT, contain the following information: (1) a listing of when and where the release occurred, and (2) a listing of the type and quantity of chemicals involved. SEA used this DOT information to develop its analysis of the potential hazardous materials transport effects of the proposed CN/IC Acquisition.

#### **4.2.1 Mainline Hazardous Materials Transport—Key Route Analysis**

<b>Summary of Issue</b>	SEA evaluated whether changes in the annual number of rail cars carrying hazardous materials would increase risk enough to warrant mitigation.
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<b>Board Thresholds for Analysis</b>	SEA evaluated any rail line segment with an increase in the volume of hazardous materials transported, and it identified 86 rail line segments that would experience an increased number of hazardous materials carloads following the proposed Acquisition. (Refer to Appendix B, "Rail Line Segments," Attachment B-1, "CN/IC Acquisition Rail Line Segment Master Table," for a complete list of rail line segments exceeding Board thresholds.)
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<b>Methods</b>	AAR defines a "Key Route" as a railroad segment that carries more than 10,000 carloads of hazardous materials (or a combination of 4,000 car loadings of poison inhalation hazard (Hazard Zone A or B), flammable gas, Class 1.1 or 1.2 explosives (Class A), and environmentally sensitive chemicals over a period of 1 year <sup>20</sup> ). Key Routes receive special treatment by railroads.
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SEA identified the rail line segments that would experience a change in Key Route status as a result of the proposed CN/IC Acquisition. Key Route status changes could occur in one of three ways. First, non-Key Routes could become Key Routes if the annual number of carloads of hazardous materials on a rail line segment would increase to 10,000 or more. Second, a Key Route could become a non-Key Route if the annual number of carloads of hazardous materials on a rail line segment would decrease to below 10,000. Finally, any route could become a Major Key Route if the

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<sup>20</sup> AAR Circular No. OT-55-B.

number of hazardous materials carloads per year would double and exceed 20,000 carloads per year.

AAR Key Route practices include the following requirements:

- Place defective-bearing detectors a maximum of 40 miles apart on Key Routes or an equivalent level of protection.
- Use rail defect detection cars to inspect main track and sidings, or perform an equivalent level of inspection, no less than twice a year.
- Use track-geometry inspection cars to inspect main track and sidings or perform an equivalent level of inspection no less than once a year.
- Use only FRA Class 2 or better track for meeting and passing "key trains."<sup>21</sup>

If the meet or pass must occur on FRA Class 1 or Excepted track due to an emergency, one of the trains must stop before the other train passes.

Key trains are subject to special restrictions, including a maximum authorized speed of 50 miles per hour. If a key train is stopped by any emergency brake application or by some unknown cause, the train must be inspected for derailed or defective cars. If a key train bearing is reported defective by a wayside detector but a visual inspection fails to confirm evidence of a defect, the train will not exceed 30 miles per hour until it has passed over the next wayside detector.

SEA reviewed information, based on the Applicants' Operating Plan and underlying data, that indicated the number of rail cars containing hazardous materials that would travel on each rail line segment. From this information, SEA identified: (1) the rail line segments on which transport of hazardous materials would increase to more than 10,000 carloads of hazardous materials annually after the proposed CN/IC Acquisition, and (2) any route on which the

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<sup>21</sup> FRA rates track in six "classes", with Class 1 being the lowest. The Class rating depends on quality and condition of the track. Track geometry and track structure govern the allowable speed over the track and the level of maintenance. The allowable maximum speed for Class 1 track is 10 mph for freight trains and 15 mph for passenger trains. For Class 2 the maximum allowable speed is 25 mph for freight trains and 30 mph for passenger trains.

number of annual hazardous materials carloads would double and exceed 20,000 carloads after the proposed CN/IC Acquisition.

**Criteria of Significance**

SEA considers the effects of the proposed CN/IC Acquisition on the rerouting of hazardous materials carloads to be potentially significant if the change in volume would make a rail line segment whose volume did not previously warrant Key Route designation into a Key Route (defined in AAR's Circular OT-55-B criterion of 10,000 annual carloads) after the proposed CN/IC Acquisition. SEA also considers impacts potentially significant if the number of hazardous materials rail cars carried would double and exceed 20,000 annual carloads if the Board approves the proposed CN/IC Acquisition. Rail line segments meeting these conditions are called "Major Key Routes." However, SEA believes that mitigation can address the potential significant impacts.

**Existing Conditions**

Currently, 85 CN and IC rail line segments are Key Routes. The following states have Key Routes: Illinois, Indiana, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, New York, Ohio, and Tennessee. The Applicants included one Key Route not owned by CN or IC in their Operating Plan because it is an essential part of one of IC's main north-south routes. SEA also analyzed this rail line segment, which runs between Metropolis, Illinois and Chiles, Kentucky over the Paducah Illinois Railroad (P&I). CN manages all of its subsidiary, the Grand Trunk Western (GTW), rail lines in Michigan as Key Routes (regardless of hazardous materials transport activity), in keeping with a corporate policy. As part of their review of hazardous materials volumes transported, the Applicants determined that they hauled 991 carloads of ozone-depleting materials in 1996. The majority of these carloads contained methyl chloroform, fluoromethane gas, and refrigerants.

Table 4-3, "Summary of the Applicants' Existing Key Routes," indicates the number of rail line segments in each state within certain ranges of hazardous materials carloads. Appendix C, "Safety Analysis Methods and Results," presents more detail on SEA's Key Routes analysis. Attachment C-5, "New Key Routes and Major Key Routes Rail Line Segments," shows the locations of the existing Key Routes as well as changes resulting from the proposed CN/IC Acquisition.

**TABLE 4-3**  
**SUMMARY OF THE APPLICANTS' EXISTING KEY ROUTES**

States	Annual Carloads of Hazardous Materials					
	IC			CN		
	10,000-20,000	20,000-30,000	>30,000	10,000-20,000	20,000-30,000	>30,000
Illinois	15	14 <sup>a</sup>	2	2	2	N/A
Indiana	N/A	N/A	N/A	N/A	1	3
Kentucky	1	1 <sup>a</sup>	2	N/A	N/A	N/A
Louisiana	2	N/A	7	N/A	N/A	N/A
Michigan	N/A	N/A	N/A	6	6	8
Minnesota	N/A	N/A	N/A	3 <sup>b</sup>	N/A	N/A
Mississippi	2	N/A	9	N/A	N/A	N/A
New York	N/A	N/A	N/A	1	N/A	N/A
Ohio	N/A	N/A	NA	2	N/A	N/A
Tennessee	N/A	N/A	5	N/A	N/A	N/A

<sup>a</sup> One segment is owned by P&I.

<sup>b</sup> The segment from Lorette, Manitoba to Rainy River, Ontario goes through Minnesota and is included.

### Analysis Results

In its analysis, SEA considered the effects of hazardous materials transport on the 86 segments with increased hazardous materials carloads. SEA estimates that increases in hazardous materials traffic would occur over approximately 2,044 track-miles as a result of the proposed CN/IC Acquisition. The following states would experience an increase in total numbers of Key Routes and/or gain Major Key Routes: Illinois, Kentucky, and Michigan. With the changes in the number of hazardous materials rail cars as a result of the proposed CN/IC Acquisition, four additional rail line segments would become Key Routes. Two rail line segments that were formerly Key Routes would experience a reduction in hazardous materials traffic and would no longer be Key Routes (i.e., from Jackson, Mississippi to Hattiesburg, Mississippi). The total number of Key Routes after the proposed CN/IC Acquisition would be 87. In addition, 10 Key Routes would become Major Key Routes.

Table 4-4, "New Key Routes and Major Key Routes," shows the estimated annual hazardous carloads for pre-and post-Acquisition

conditions, as well as the new Key Routes and New Major Key Routes, for the states of:

- Illinois.
- Kentucky.
- Michigan.

**TABLE 4-4  
NEW KEY ROUTES AND MAJOR KEY ROUTES**

Railroad	ID#	Rail Line Segment		Miles in State	Estimated Annual Hazardous Materials Carloads		Significance Thresholds	
		Between	And		Pre-Acquisition	Post-Acquisition	New Key Route	Major Key Route
ILLINOIS								
IC	187	Matteson, IL	Kankakee, IL	26.6	26,645	54,385		X
IC	190	Kankakee, IL	Otto, IL	5.2	27,010	54,385		X
IC	205	Otto, IL	Gilman, IL	20.6	27,010	54,385		X
IC	305	Gilman, IL	Champaign, IL	46.3	27,375	54,750		X
IC	315	Champaign, IL	Maroon, IL	45.1	27,087	55,269		X
IC	360	Edgewood, IL	Centralia, IL	37.3	15,330	35,040		X
IC	365	Centralia, IL	Rensselaers, IL	23.5	16,060	33,215		X
IC	370	Rensselaers, IL	Du Quoin, IL	11.7	16,060	33,215		X
IC	380	Carbondale, IL	Cairo, IL	54.4	12,410	27,010		X
IC	385	Cairo, IL <sup>a</sup>	Fulton, KY	1.8	12,410	27,010		X
KENTUCKY								
IC	385	Fulton, KY <sup>a</sup>	Cairo, IL	41.7	12,410	27,010		X
MICHIGAN								
CN	1222	Detroit Intermodal, MI <sup>b</sup>	Mal Junction, MI	14.6	8,395	12,775	X	
CN	1225	Mal Junction, MI <sup>b</sup>	Pontiac, MI	0.9	8,395	12,775	X	
CN	1230	Pontiac, MI <sup>b</sup>	West Pontiac, MI	2.2	8,395	12,775	X	

**TABLE 4-4  
NEW KEY ROUTES AND MAJOR KEY ROUTES**

Railroad	ID#	Rail Line Segment		Miles In State	Estimated Annual Hazardous Materials Carloads		Significance Thresholds	
		Between	And		Pre-Acquisition	Post-Acquisition	New Key Route	Major Key Route
CN	1235	West Pontiac, MI <sup>a</sup>	Durand, MI	38.3	8,395	12,775	X	

- <sup>a</sup> These two listings are the same rail line segment, which crosses the state line.
- <sup>b</sup> Managed as a Key Route.

SEA estimated that the post-Acquisition volume of ozone-depleting materials transported on the integrated CN/IC rail system would decrease by 129 carloads per year. The Applicants stated that this decrease in volume would result from diversions to other railroad systems.

#### **SEA's Conclusions**

SEA recommends the following mitigation measures for the four new Key Routes and the 10 Major Key Routes. SEA believes its recommended mitigation addresses potential safety impacts that could otherwise result along the above rail line segments, which exceed SEA's criteria of significance for transport of hazardous materials on Key Routes and Major Key Routes.

1. Comply with the current AAR "key train" guidelines and any subsequent revisions on all Key Routes and Major Key Routes.
2. Require CN and IC to continue compliance with AAR Key Route standards and practices for the four rail line segments in Michigan that would become Key Routes after the proposed Acquisition. The Applicants are already managing these rail line segments as Key Routes.
3. Provide dedicated toll-free telephone numbers to the emergency response organizations or coordinating bodies responsible for each community located along all Key Routes and Major Key Routes.
4. Distribute their current Hazardous Materials Emergency Response Plans to each local emergency response

organization or coordinating body in the communities along all Key Routes and Major Key Routes.

5. Work with each local emergency response organization or coordinating body in communities along Major Key Routes to develop and provide a local Hazardous Materials Emergency Response Plan to be implemented in coordination with the Applicants' Hazardous Materials Response Plan.
6. Implement a simulation emergency response drill or training session with the voluntary participation of local emergency response committees or coordinating bodies in affected communities along each Major Key Route.

With this mitigation, SEA believes no significant impacts for hazardous materials transport would occur along rail line segments.

#### **4.2.2 Mainline Accidents/Likelihood of a Release**

##### **Summary of Issue**

SEA evaluated whether increases in rail activity on particular rail line segments would increase the likelihood of an accidental release of hazardous materials.

##### **Board Thresholds for Analysis**

In accordance with the Board's threshold for analysis, SEA calculated the likelihood of a hazardous materials release on a mainline for rail line segments that would experience an increase in hazardous materials transport activity as a result of the proposed CN/IC Acquisition. As previously stated, SEA identified 86 rail line segments that would experience an increased number of hazardous materials carloads following the proposed Acquisition. (Refer to Appendix B, "Rail Line Segments," Attachment B-1, "CN/IC Acquisition Rail Line Segment Master Table," for a complete list of rail line segments exceeding Board thresholds.)

##### **Methods**

SEA based its analysis on the underlying assumption that rail-related accident occurrences correlate to the level of rail activity. SEA identified and analyzed rail line segments and rail yards that would experience increased hazardous materials transport and handling activity as a result of the proposed CN/IC Acquisition. SEA used the following general approach to evaluate the potential effects of the proposed CN/IC Acquisition on hazardous materials transport safety:



- Obtain historical system-wide hazardous materials release rates expressed as number of releases per million train-miles for mainline tracks.
- Apply system-wide historical release rates to existing conditions on rail line segments to estimate release frequencies before the proposed CN/IC Acquisition.
- Apply the same system-wide historical accident rates to the Applicants' estimated post-Acquisition conditions on their rail line segments with increased hazardous materials activity to predict the release frequencies after the proposed CN/IC Acquisition.

Appendix C, "Safety Analysis Methods and Results," provides details of the mainline release analysis methods that SEA used. Attachment C-7, "Mainline Hazardous Materials Release Results," provides the results of SEA's analysis.

**Criteria of Significance**

SEA did not develop specific criteria. SEA used the results of the release analysis to identify rail line segments where the risk of release would be unusually high, warranting additional mitigation.

**Existing Conditions**

SEA's evaluation considered historical hazardous materials release rates and the railroads' emergency response plans in the event of accidental release. The following sections discuss these analyses for the 86 rail line segments that would experience an increased number of hazardous materials carloads following the proposed CN/IC Acquisition.

**System-wide Historical Hazardous Materials Release**

**Summary.** The Board's regulations<sup>22</sup> require that the Applicants provide a summary of their history of hazardous materials releases. Attachment C-3, "Historical Hazardous Materials Releases," in Appendix C, "Safety Analysis Methods and Results," provides a more detailed discussion of these releases.

The Applicants summarized historical data for each of the railroads involved in the proposed CN/IC Acquisition to identify the frequency and nature of past releases of hazardous materials. The DOT Hazardous Materials Incident Reporting System (HMIRS) is a database that tracks hazardous materials release incidents in all modes of transportation and includes release incidents that the

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<sup>22</sup> 49 CFR 1105.7(e)(7).

railroads have reported to DOT. Most "incidents" included in the HMIRS would not meet FRA accident reporting thresholds.<sup>23</sup> The Applicants used the HMIRS database to characterize past incidents of hazardous materials releases by CN (on the U.S. portions) and IC (including their subsidiaries). The Applicants reviewed 5 years (June 1993 through May 1998) of data to identify the location, source, and size of spills. The following railroads reported data:

- IC and its operating affiliates, Chicago, Central & Pacific Railroad Company (CCP) and Cedar River Railroad Company.
- All of CN's U.S. operating subsidiaries, including Grand Trunk Western (GTW), and Duluth, Winnipeg & Pacific (DWP).

Table 4-5, "Total Hazardous Materials Incidents Reported by IC and CN from June 1993 to May 1998," shows the number of incidents that each railroad reported between June 1993 and May 1998.

**TABLE 4-5**  
**TOTAL HAZARDOUS MATERIALS INCIDENTS REPORTED BY IC AND CN**  
**FROM JUNE 1993 TO MAY 1998**

Carrier	5/93-12/93	1994	1995	1996	1997	1/98-5/98	Total
IC	6	29	22	18	31	16	122
CCP	0	1	1	0	0	0	2
DWP	0	0	0	0	0	0	0
GTW	2	11	12	5	7	3	40
Total Per Year	8	41	35	23	38	19	164

IC, CCP, and GTW reported a total of 164 incidents that involved hazardous materials from June 1993 through May 1998. DWP did not have any reportable hazardous materials incidents during the 5-year period. GTW accounted for 25 percent of these incidents, and IC and CCP (including Cedar River Railroad Company) accounted for the remaining 75 percent. Over the 5-year period,

<sup>23</sup> The 1997 FRA accident reporting threshold requires railroads to report any rail accident that results in at least \$6,500 of damage to tracks, signals, or equipment. Many hazardous materials releases are not a result of train accidents that meet this threshold; however, they are included in the HMIRS but not in FRA's rail accident database.

CN generally showed a decreasing trend in the number of incidents reported. The number of releases reported by IC fluctuated over the 5-year period, with no clear trend. CCP experienced too few releases to derive a meaningful trend. Variations in the level of hazardous materials shipments from year to year could affect the occurrence of incidents.

SEA evaluated the number of incidents per state during the 5-year period. Table 4-6, "Summary of Hazardous Materials Incidents Reported by IC and CN from June 1993 to May 1998 by State," shows a summary of the incidents by carrier and by state.

**TABLE 4-6**  
**SUMMARY OF HAZARDOUS MATERIALS INCIDENTS REPORTED BY**  
**IC AND CN FROM JUNE 1993 TO MAY 1998 BY STATE**

State	IC	CCP	DWP	GTW	Total
Alabama	2	N/A	N/A	N/A	2
Iowa	N/A	2	N/A	N/A	2
Illinois	36	0	N/A	0	36
Indiana	N/A	N/A	N/A	2	2
Kentucky	2	N/A	N/A	N/A	2
Louisiana	37	N/A	N/A	N/A	37
Michigan	N/A	N/A	N/A	38	38
Mississippi	23	N/A	N/A	N/A	23
Tennessee	22	N/A	N/A	N/A	22
<b>TOTAL</b>	122	2	0	40	164

N/A The railroad does not operate in the state.

For each of the 164 hazardous materials incidents the Applicants reported from June 1993 to May 1998, the DOT database attributed the cause of the incidents to one of the following categories: human error, package failure, vehicular accident, derailment, or "other." The "other" category includes vandalism, fire, pressure release or venting incidents, materials incompatibility, and incidents with unreported causes.

Based on historical accident information in the FRA database, the number of hazardous materials releases that involve rail accidents/derailments is low and most rail accidents do not result in hazardous materials releases. Of the 164 incidents reported in the DOT database, accidents/derailments caused 23 incidents (14 percent). For CN, accidents/derailments caused 5 percent of its total number of reported releases. For IC, 17 percent of its reported incidents related to accidents/derailments. The DOT database attributed more than 86 percent (143) of the 164 incidents to human error, package failure, and "other." Table 4-7, "Causes of Hazardous Materials Incidents Reported by IC and CN, from June 1993 to May 1998," shows the breakdown of incidents by railroad.

**TABLE 4-7**  
**CAUSES OF HAZARDOUS MATERIALS INCIDENTS REPORTED**  
**BY IC AND CN, FROM JUNE 1993 TO MAY 1998**

Cause	IC	CCP	DWP	GTW	Total
Accident/ Derailment	16 <sup>a</sup>	1	0	2	23
Human Error	37	1	0	25	63
Package Failure	40	0	0	6	46
Other	21 <sup>b</sup>	0	0	7	32
<b>TOTAL</b>	<b>122</b>	<b>2</b>	<b>0</b>	<b>40</b>	<b>164</b>

<sup>a</sup> IC reported four additional accident/derailment incidents that did not involve a release.

<sup>b</sup> IC reported four other additional incidents that did not involve a release.

**Chemicals Likely To Be Transported and the Likelihood of Chemical Mixing.** SEA reviewed the types of chemicals CN and IC transport that, if mixed, could form a more hazardous compound as a result of a chemical reaction. In some instances, when two or more chemicals mix, the combined hazard could be worse than the hazard posed by the release of the individual materials. Attachment C-4, "List of Hazardous Materials To Be Transported," in Appendix C, "Safety Analysis Methods and Results," provides a list of hazardous materials the Applicants would likely transport as a result of the proposed CN/IC Acquisition. SEA reviewed the list to determine whether any change in the risk of hazardous materials mixing during an incident would result from the proposed CN/IC Acquisition.

SEA determined that the Applicants transport nearly all classes of hazardous materials and handle a total of 1,174 different hazardous commodities. The following list names the majority of the commodities: plastic resins, poisonous/corrosive gases, acids, flammable gases, flammable liquids, caustics, unspecified mixed loads, oxidizers, petroleum products, molten sulfur, miscellaneous chemicals not otherwise specified, and liquefied carbon dioxide. Appendix C, "Safety Analysis Methods and Results," provides the complete list.

The Applicants follow DOT regulations that specify shipping and packaging requirements that prevent hazardous materials mixing to form more hazardous compounds. DOT regulations (49 CFR 173.21) discuss "Forbidden Materials and Packages." These regulations prohibit shipment of materials "in the same packaging, freight container, or overpack with another material, the mixing of which is likely to cause a dangerous evolution of heat, or flammable or poisonous gases or vapors, or to produce corrosive materials." Packaging regulations also protect against chemical mixing and releases as a result of packaging failures. The general requirements for packaging and packages provided in 49 CFR 173.24 specify that packages containing hazardous materials be such that under normal conditions no mixing of gases or vapors will occur and compromise the integrity of the packaging. The regulations also govern the location of hazardous materials cars in a train. Cars which are incompatible, or contain incompatible commodities, are not to be placed next to each other. For example, a placarded car may not be placed next to a flat car loaded with steel pipe, as the steel pipe could shift and damage the car carrying the hazardous materials. Furthermore, DOT has adopted the United Nations Recommendations on the Transport of Dangerous Goods, which include a requirement that packaging and contents be compatible.

**Emergency Response and Contingency Plan Review.** The Applicants' emergency response plans address emergency preparedness, prevention, and response. These plans identify available resources and procedures for responding to a potential accident involving hazardous materials. The Applicants conduct periodic employee training to reinforce the information provided in the plans. Following the proposed CN/IC Acquisition, the Applicants would coordinate their safety and emergency response programs. The Applicants have identified aspects of the individual CN and IC programs, as described below, that would be beneficial

for both railroads to implement if the proposed CN/IC Acquisition is approved.

CN's Emergency Response Plan outlines the following: (1) procedures for protecting personnel, property, and the environment at the scene of a release; and (2) procedures for alerting the proper emergency response authorities.

In addition to its emergency response plan, CN has several other hazardous materials safety programs in place. CN's Operation Management Center's computer and advanced communication systems provide first responders, police, fire officials, and medical and other emergency personnel with important information regarding an incident. The information includes the location of an incident, the properties of the hazardous materials involved in an incident, and the characteristics of the terrain where an incident occurred.

CN also participates in Responsible Care<sup>®</sup>, which is an initiative of the Chemical Manufacturers Association. Responsible Care<sup>®</sup> participants commit to environmental, health, and safety responsibility in chemical manufacturing, transportation, and handling. Although IC is not an official member of Responsible Care<sup>®</sup>, its management and operational philosophies are similar to those advocated by Responsible Care<sup>®</sup>.

In addition, CN and IC participate in Operation Respond. Operation Respond provides national distribution of emergency data to ensure that first responders can obtain information about released hazardous materials quickly by computer.

IC has a plan entitled, "Hazardous Materials Incident in Transportation Emergency Action Plan." This plan outlines the first responder responsibilities, which include notifying the proper emergency responders and taking appropriate safety precautions. IC provides training to all parties (i.e., first responders, transportation supervisors, tank specialists, shippers, and receivers) who are involved in hazardous materials shipping. One of the ways that IC trains its employees is through use of a "HazMat Safety Train," which is a rail car that IC uses for training purposes so that personnel may obtain real-life practice in hazardous materials operations. IC also offers a nonaccidental release training program to shippers and receivers.

CN and IC both participate in TransCAER® (Transportation Community Awareness and Emergency Response). This Chemical Manufacturers Association-sponsored program provides emergency training events for communities through which the Applicants ship dangerous goods and hazardous materials. The events include training for fire, police, and emergency medical personnel as well as for local planning committees and disaster management agencies located near the CN and IC rail systems. IC also funds community participation in additional training courses at the AAR's Transportation Technology Center in Pueblo, Colorado.

## Analysis Results

**System-wide Historical Hazardous Materials.** As a result of the proposed CN/IC Acquisition, nine states (Illinois, Indiana, Iowa, Kentucky, Louisiana, Michigan, Mississippi, Ohio, and Tennessee) would have increases in hazardous materials carloads on rail line segments. Because some segments occur in multiple states and segment lengths vary, SEA reports the results of the mainline release analysis by track-mile. SEA normalized the results per track-mile to allow comparison among segments.

SEA presents the results of the mainline release analysis in terms of release intervals, which are the number of years between releases per track-mile. For example, a release interval of 250 years means that one release per track-mile would be predicted to occur every 250 years.

On 22 of the rail line segments that would experience an increase in the number of hazardous materials carloads, the number of trains per day traveling on those rail line segments would decrease. (See Attachment C-6, "All Rail Line Segments with an Estimated Increase in Hazardous Materials Activity," in Appendix C, "Safety Analysis Methods and Results.") Because the number of releases predicted per year on a rail line segment depends on the number of carloads containing hazardous materials and the number of trains, as well as other factors such as FRA track class, an overall decrease in the estimated number of releases per year could occur on those rail line segments. (See Attachment C-7, "Mainline Hazardous Materials Release Results," in Appendix C, "Safety Analysis Methods and Results.")

Table 4-8, "Mainline Hazardous Materials Releases," shows the affected rail line segments and the change in the predicted release intervals as a result of the proposed CN/IC Acquisition.

In most cases, the release interval per mile increases as a result of the proposed CN/IC Acquisition. In very few cases, the release interval per mile decreases. Based on its analysis, SEA determined that hazardous materials releases are too infrequent and the change in release frequencies too marginal to be significant.

**Chemicals to be Transported and the Likelihood of Chemical Mixing.** SEA determined that because the Applicants must follow these regulations, the likelihood is small that chemicals would mix to form a more hazardous material during an incident. The list of chemicals that the Applicants would ship via the integrated CN/IC rail system does not differ from those the Applicants transport at present. Thus, the proportion of hazardous materials carried would not change appreciably after the proposed CN/IC Acquisition. None of the Applicants' 164 accident/derailment and non-accident/derailment incidents that occurred during the past 5 years of operations involved chemical mixing.

**Emergency Response and Contingency Plan Review.** Based on its review of the Applicants' plans to respond to emergencies and hazardous materials incidents, SEA found them adequate.

#### **SEA's Conclusions**

Based on its analysis, SEA concludes that the hazardous materials release impacts associated with the proposed Acquisition would not be significant. Because existing DOT and other regulations regarding shipping and packaging chemicals are comprehensive, the Applicants' emergency response and contingency plans are adequate, and SEA's preliminary recommended mitigation for Key Routes and Major Key Routes would provide an added measure of protection for the rail line segments that carry the most hazardous materials, SEA concludes that no other mitigation is warranted.



**TABLE 4-8  
MAINLINE HAZARDOUS MATERIALS RELEASES**

Rail Line Segment			Pre-Acquisition Release Interval per Mile (Years) <sup>a</sup>	Post-Acquisition Release Interval per Mile (Years) <sup>a</sup>
ID #	Between	And		
ILLINOIS				
325	Decatur, IL	Mount Pulaski, IL	10,658	7,520
158	Bridgeport, IL	Glenn Yard, IL	1,243	1,320
230	Mount Pulaski, IL	Springfield, IL	—	13,638
320	Mattoon, IL	Decatur, IL	3,529	3,168
255	Church, IL	Coulterville, IL	3,015	2,599
275	Coulterville, IL	Pinckneyville, IL	3,015	2,599
280	Pinckneyville, IL	De Quoin, IL	3,306	2,668
400	Bridgeport, IL	BRC-CCP Crossing, IL	3,955	2,236
173	Chicago 94 <sup>th</sup> Street, IL	137 <sup>th</sup> (Riverdale), IL	3,005	2,212
157	Chicago 21 <sup>st</sup> Street, IL	Bridgeport, IL	1,048	861
170	Chicago, IL	Chicago 21 <sup>st</sup> St, IL	2,780	2,271
171	Chicago, IL	Chicago 94 <sup>th</sup> St, IL	2,780	2,271
174	137 <sup>th</sup> (Riverdale), IL	Harvey, IL	1,869	1,992
102	BRC-CCP Crossing, IL	Hawthorne Yard, IL	3,955	1,762
104	Hawthorne Yard, IL	Broadview, IL	3,726	1,922
1060	Thornon Junction, IL	Harvey, IL	1,462	1,186
390	Edgewood, IL	Akin Junction, IL	1,584	1,303
395	Akin Junction, IL	Russ Spur, IL	1,511	1,227
397	Russ Spur, IL	Ferber, IL	1,429	1,175
410	Ferber, IL	Harco, IL	1,360	1,125
412	Harco, IL	Delta 2, IL	1,469	1,198
420 <sup>a</sup>	Metropolis, IL <sup>b</sup>	Chiles, KY	1,461	1,293
185	Homewood, IL	Matteson, IL	667	503

**TABLE 4-8  
MAINLINE HAZARDOUS MATERIALS RELEASES**

Rail Line Segment			Pre-Acquisition Release Interval per Mile (Years) <sup>a</sup>	Post-Acquisition Release Interval per Mile (Years) <sup>a</sup>
ID #	Between	And		
380	Carbondale, IL	Cairo, IL	2,980	1,362
385	Cairo, IL	Fulton, KY	3,508	1,554
415	Delta, IL	Metropolis, IL	1,511	1,227
375	Du Quoin, IL	Carbondale, IL	2,057	1,111
175	Harvey, IL	Homewood, IL	1,388	1,053
365	Centralia, IL	Renlakhmine, IL	2,374	1,249
370	Renlakhmine, IL	Du Quoin, IL	2,245	1,194
360	Edgewood, IL	Centralia, IL	2,879	1,244
305	Gilman, IL	Champaign, IL	1,460	844
190	Kankakee, IL	Otto, IL	1,366	839
205	Otto, IL	Gilman, IL	1,366	839
355	Effingham, IL	Edgewood, IL	993	642
187	Mareton, IL	Kankakee, IL	1,428	863
340	Mattoon, IL	Effingham, IL	1,353	738
315	Champaign, IL	Mattoon, IL	1,483	788
1055 <sup>a</sup>	Griffith, IN	Thomton Junction, IL	1,365	1,186
<b>INDIANA</b>				
1055 <sup>a</sup>	Griffith, IN	Thomton Junction, IL	1,365	1,186
1054	Wellsboro, IN	Griffith, IN	798	780
1052	South Bend, IN	Wellsboro, IN	839	828
<b>IOWA</b>				
120	Manchester, IA	Marion Junction, IA	—	20,325
123	Marion Junction, IA	Cedar Rapids, IA	—	20,325
115	Dubuque, IA	Delaware, IA	8,856	9,114
117	Delaware, IA	Manchester, IA	10,715	11,146
<b>KENTUCKY</b>				

**TABLE 4-8  
MAINLINE HAZARDOUS MATERIALS RELEASES**

Rail Line Segment			Pre-Acquisition Release Interval per Mile (Years) <sup>a</sup>	Post-Acquisition Release Interval per Mile (Years) <sup>a</sup>
ID #	Between	And		
430	Chiles, KY	Fulton, KY	1,212	1,038
435	Fulton, KY	Dyersburg, TN	925	610
385	Cairo, IL	Fulton, KY	3,508	1,334
<b>LOUISIANA</b>				
420	Metropolis, IL <sup>b</sup>	Chiles, KY	1,461	1,293
605	Hammond, LA	Baton Rouge, LA	4,241	3,512
635	Geismar, LA	Baton Rouge, LA	1,215	941
600	McComb, MS	Hammond, LA	1,053	1,076
<b>MICHIGAN</b>				
1160	Monroe, MI	Long, OH	1,800	1,829
1170	Flint Rock, MI	Diann, MI	22,828	12,747
1000	Samia, ON	Sparlingville, MI	930	967
1100	FN Tower, MI	Monroe, MI	1,542	1,595
1149	Bay City Junction, MI	Detroit, MI	3,124	2,183
1220	Milwaukee Junction, MI	Detroit Intermodal, MI	3,346	2,726
1023	Flint, MI	Swartz Creek, MI	1,256	1,082
1030	Swartz Creek, MI	Durand, MI	1,256	1,082
1005	Sparlingville, MI	Imlay City, MI	1,412	1,395
1015	Imlay City, MI	Belsay, MI	1,412	1,395
1020	Belsay, MI	Flint, MI	1,298	1,395
1230	Pontiac, MI	West Pontiac, MI	6,286	2,786
1235	West Pontiac, MI	Durand, MI	6,286	2,786
1222	Detroit Intermodal, MI	Mal Junction, MI	3,510	2,879
1225	Mal Junction, MI	Pontiac, MI	3,510	2,879
1135	Detroit East Yard, MI	Milwaukee Junction, MI	833	694

**TABLE 4-8**  
**MAINLINE HAZARDOUS MATERIALS RELEASES**

Rail Line Segment			Pre-Acquisition Release Interval per Mile (Years) <sup>a</sup>	Post-Acquisition Release Interval per Mile (Years) <sup>b</sup>
ID #	Between	And		
1085	Boy City Junction, MI	River Rouge, MI	528	567
1095	River Rouge, MI	FN Tower, MI	702	560
1100	FN Tower, MI	D&I Junction, MI	363	309
1105	D&I Junction, MI	Flat Rock, MI	329	351
1040	Battle Creek, MI	Pavilion, MI	859	838
1050 <sup>c</sup>	Pavilion, MI	South Bend, IN	859	838
1035	Derand, MI	Battle Creek, MI	798	823
1140	Milwaukee Junction, MI	Vinewood, MI	615	460
<b>MISSISSIPPI</b>				
475 <sup>d</sup>	West Junction, TN	Lake Cormorant, MS	986	973
535	Jackson, MS	Brookhaven, MS	970	1,020
595	Brookhaven, MS	McComb, MS	1,055	1,076
600 <sup>e</sup>	McComb, MS	Hammond, LA	1,055	1,076
480	Lake Cormorant, MS	Marks, MS	986	973
485	Marks, MS	Swan Lake, MS	986	852
495	Swan Lake, MS	Greenwood, MS	986	852
500	Greenwood, MS	Yazoo City, MS	986	973
505	Yazoo City, MS	Jackson, MS	986	852
<b>OHIO</b>				
1165	Lang, OH	Toledo, OH	343	333
1160 <sup>f</sup>	Monroe, MI	Lang, OH	1,800	1,829
<b>TENNESSEE</b>				
455	Memphis Yards, TN	Memphis Yards, TN	377	327
453	Woodstock, TN	Grenada Wye, TN	414	300
440	Dyersburg, TN	Woodstock, TN	925	610
475 <sup>g</sup>	West Junction, TN	Lake Cormorant, MS	986	973

**TABLE 4-8  
MAINLINE HAZARDOUS MATERIALS RELEASES**

Rail Line Segment			Pre-Acquisition Release Interval per Mile (Years) <sup>a</sup>	Post-Acquisition Release Interval per Mile (Years) <sup>a</sup>
ID #	Between	And		
435 <sup>c</sup>	Fulton, KY	Dyersburg, TN	925	610

<sup>a</sup> Release intervals are years between releases per truck-mile.

<sup>b</sup> P&I owns this rail line segment.

<sup>c</sup> Segments occur in multiple states and are noted under each state in which they occur.

### 4.2.3 Rail Yards Release Analysis

#### Summary of Issue

To evaluate potential effects on safety at rail yards, SEA calculated the likelihood of a hazardous materials release during a switching event derailment. Switching events occur when a car or a block of several cars is switched in or out of a train at the origin or destination point, or when a train is disassembled and reassembled in a rail yard. A larger number of cars switched as a group or block is a block swap. Based on information they provided in their Operating Plan, the Applicants' average block swap involves 13.9 cars.

#### Board Thresholds for Analysis

As provided for in the Board's thresholds, SEA evaluated all rail yards and intermodal facilities that would experience an increase in the number of cars switched and cars block-swapped per day. SEA identified 37 rail yards that would switch an increased number of cars containing hazardous materials following the proposed Acquisition. (Refer to Appendix C, Attachment C-8, "Rail Yard Hazardous Materials Release Results.")

#### Methods

SEA estimated the total number of cars switched per day, plus one-third of the number of cars block-swapped per day, to determine the total number of switching events that the Applicants would perform each year. Because in a block swap cars are handled as a group or block and not individually, derailments are less likely to occur. SEA determined that a car switched in a block of between 10 and 15 cars is one-third as likely to derail as a car switched alone. SEA multiplied the number of cars block-swapped at a rail yard by 0.33, to calculate an "equivalent" number of cars switched. To determine the likelihood of a rail yard event resulting in a hazardous materials release, SEA considered rail yards that would

experience any increase in the daily number of hazardous materials-containing cars switched and/or block-swapped.

SEA also applied historical accident rates to the Applicants' estimated switching activity to predict accident frequencies if the proposed CN/IC Acquisition is approved. SEA reviewed information from the FRA reportable-accident database to determine the number of derailments that occurred during rail yard switching events. SEA reviewed information on the number of FRA-reportable accidents that occurred on the Applicants' rail lines between 1995 and 1997 and that met the following criteria: (1) involved loaded freight cars and (2) occurred either on the industry, siding, or yard tracks or on mainline tracks but involved a single car or less than a full train cut.

SEA divided the number of accidents that met those criteria by the total number of their switching events that occurred between 1995 and 1997 to compute a derailment rate per million switching events for their operations. To estimate a derailment frequency at the Applicants' rail yards, SEA multiplied the derailment rate by the total of the following: (1) the number of cars switched, and (2) one-third of the number of cars block-swapped. SEA multiplied this value by the nation-wide release rate of 0.038 hazardous materials releases per rail yard derailment to obtain the number of estimated hazardous materials releases per year at the rail yard.

Attachment C-8, "Rail Yard Hazardous Materials Release Results," in Appendix C, "Safety Analysis Methods and Results," provides additional details about the methods SEA used to perform these analyses.

**Criteria of Significance**

SEA has not established specific criteria to identify significant effects from changes in hazardous materials carloads handled at rail yards. Rather, in evaluating the hazardous materials activity for each rail yard, SEA considers frequency of release and the likely impact of any release to determine whether the project changes in hazardous materials volumes would be significant.

**Existing Conditions**

The existing CN and IC rail systems include 52 rail yards and nine intermodal facilities. The Applicants handle approximately 11,310 rail cars per day at these facilities. Approximately 7.5 percent of these cars carry hazardous materials.

**Analysis Results**

As a result of the proposed CN/IC Acquisition, 37 of these rail yards would experience an increase in hazardous materials activity. The affected rail yards are in nine states (Alabama, Illinois, Iowa, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, and Tennessee).

Table 4-9, "Rail Yard Hazardous Materials Release Frequency," shows the affected rail yards, their location, the number of pre- and post-Acquisition carloads of hazardous materials switched per day, and the pre- and post-Acquisition predicted release intervals.

**TABLE 4-9**  
**RAIL YARD HAZARDOUS MATERIALS RELEASE FREQUENCY**

Rail Yard Name	Pre-Acquisition Hazardous Materials Carloads Switched Per Day	Post-Acquisition Hazardous Materials Carloads Switched Per Day	Pre-Acquisition Predicted Release Interval (Years)	Post-Acquisition Predicted Release Interval (Years)	Change in Predicted Release Interval (Years)	Percent Increase in Frequency
<b>ALABAMA</b>						
Mobile	27.6	28.2	72	70	(2)	2.9
<b>ILLINOIS</b>						
Carbondale	0.8	1.2	2,474	1,725	(749)	43.4
Centralia	32.2	39.3	62	51	(11)	21.6
Champaign	36.0	53.4	55	37	(18)	48.6
Couherville	0.8	0.9	2,355	2,092	(263)	12.6
Decatur	24.6	28.1	81	71	(10)	14.1
Du Quoin	1.0	1.3	2,023	1,487	(536)	36
Effingham	18.6	19.6	107	102	(5)	4.9
Freeport	1.3	1.4	1,561	1,399	(162)	11.6
Glenn Yard	19.6	19.9	101	100	(1)	1
Hawthorne	2.7	3.2	741	624	(117)	18.8
Markham Yard	43.2	57.8	46	34	(12)	35.3
Mattoon	3.8	5.5	516	361	(155)	42.9
Mount Pulaski	6.4	6.9	308	288	(20)	6.9

**TABLE 4-9**  
**RAIL YARD HAZARDOUS MATERIALS RELEASE FREQUENCY**

Rail Yard Name	Pre-Acquisition Hazardous Materials Carloads Switched Per Day	Post-Acquisition Hazardous Materials Carloads Switched Per Day	Pre-Acquisition Predicted Release Interval (Years)	Post-Acquisition Predicted Release Interval (Years)	Change in Predicted Release Interval (Years)	Percent Increase in Frequency
Springfield	0	0.04	—	53,985	53,985	—
Cedar Rapids	5.8	6.1	340	324	(16)	4.9
<b>IOWA</b>						
Council Bluffs	5.0	7.2	394	277	(117)	42.2
Fort Dodge	17.2	17.4	116	114	(2)	1.8
Manchester	0.8	0.9	2,578	2,217	(361)	16
Sioux City	4.0	4.2	495	476	(19)	4.0
Waterloo	13.2	14.5	151	137	(14)	10
<b>KENTUCKY</b>						
Fulton	21.0	23.8	95	84	(11)	13.1
<b>LOUISIANA</b>						
Baton Rouge	17.0	17.7	117	112	(5)	4.5
<b>MICHIGAN</b>						
Battle Creek	38.7	41.1	51	48	(3)	6.3
Dearborn	6.5	6.6	304	299	(5)	1.7
Detroit	6.2	9.0	321	221	(100)	45.2
Durant	10.5	10.6	190	187	(3)	1.6
Ecorse	6.8	7.5	291	263	(26)	9.8
Edison	0.6	0.8	3,297	2,571	(726)	28.2
Flat Rock	51.2	53.4	39	37	(2)	5.4
Flint	19.5	21.3	102	93	(9)	9.7
Lansing	10.5	10.8	189	185	(4)	2.2
Pontiac	15.3	15.4	130	129	(1)	0.8



**TABLE 4-9**  
**RAIL YARD HAZARDOUS MATERIALS RELEASE FREQUENCY**

Rail Yard Name	Pre-Acquisition Hazardous Materials Carloads Switched Per Day	Post-Acquisition Hazardous Materials Carloads Switched Per Day	Pre-Acquisition Predicted Release Interval (Years)	Post-Acquisition Predicted Release Interval (Years)	Change in Predicted Release Interval (Years)	Percent Increase in Frequency
Port Huron	0.6	1.0	3,140	1,978	(1,162)	58.7
<b>MINNESOTA</b>						
Glenville	2.76	2.81	721	707	(14)	2.0
<b>MISSISSIPPI</b>						
Hattiesburg	9.7	10.1	204	196	(8)	4.1
<b>TENNESSEE</b>						
Johnston Yard	60.8	83.1	33	24	(9)	38

Note: Numbers in parentheses represent decreased intervals.

In its analysis of change in the predicted interval between hazardous materials releases due to rail yard accidents, SEA found that release intervals are currently infrequent and would remain infrequent in the post-Acquisition case.

In its analysis of the impact of a hazardous materials release due to a rail yard accident, SEA reviewed the Applicants' record of hazardous materials releases due to rail yard accidents. SEA concluded that in the past 5 years, June 1993 to May 1998, the Applicants have had eight hazardous materials releases due to rail yard accidents. The average volume of release was 87 gallons. SEA determined that hazardous materials releases of this size generally have a localized and minor impact. In its analysis, SEA found that the impact of small hazardous materials spills would be further minimized through the quick detection and response of yard-based emergency responders. The first stage of emergency response, detection and notification, would be available at all yards in the proposed CN/IC Acquisition. Further, the nature of the spill response, including containment and recovery, depends on the type of hazardous material spilled. Yards, either through their own resources or through third-party contractors, would be able to contain and recover common materials such as diesel fuel. Larger yards and shippers of hazardous materials that would require

specialized skills, such as chlorine gas or liquefied petroleum gas, would be the base for dedicated emergency response staff. This ability to respond quickly would further minimize any potential for adverse effects to human health and safety resulting from the release. Appendix C, "Safety Analysis Methods and Results," discusses the rail yard release analysis in further detail. Attachment C-8, "Rail Yard Hazardous Materials Release Results," in Appendix C shows the locations of all the rail yards and the results of SEA's rail yard analysis.

#### **SEA's Conclusions**

SEA concludes that, although 37 rail yards would experience an increase in hazardous materials activity as a result of the proposed Acquisition, the potential increase in accidents would not be significant. SEA bases this conclusion on the following: (1) hazardous materials releases resulting from rail yard accidents are infrequent; (2) releases that do occur are typically small and have a minor, localized impact; and (3) yard-based emergency responders would quickly detect and respond to accidents, further minimizing potential impacts. SEA notes that CN's existing High Incident Safety Program contains measures that address rail yard safety and could also contribute to a future reduction in the frequency and severity of a hazardous materials release, if the proposed Acquisition is approved. Under this program, CN has developed a set of "how to" guidelines that integrate common rail yard operating rules and operational best practices and works closely with local labor-management health and safety committees to train transportation operating employees. The Applicants plan to extend this successful program to IC yard operations. This program is described in Appendix V, "Safety Integration Plan."

### **4.3 PASSENGER RAIL OPERATIONS SAFETY**

Because passenger trains operate on and adjacent to the Applicants' rail lines, SEA evaluated whether:

1. Increases in the number of freight trains on a rail line segment could increase the possibility of a collision between a passenger train and a freight train on segments where passenger and freight trains share rail lines.
2. Safety would be affected where passenger and freight rail lines would run on adjacent parallel lines. These areas are known as "common corridors."

SEA concludes that none of the rail line segments where passenger and freight trains share track would experience significant increased risk as a result of the proposed CN/IC Acquisition. Therefore, SEA is not recommending passenger rail safety mitigation. In its evaluation of

common corridor issues, SEA determined that the increased risk resulting from Acquisition-related increases in freight rail operations would be small for the one common corridor on the proposed combined rail system, thus SEA is not recommending mitigation to address common corridor issues either.

#### 4.3.1 Passenger Rail Line Segment Safety Analysis

##### Summary of Issue

Because passenger trains operate on and adjacent to the Applicants' rail lines, SEA evaluated whether increases in the number of freight trains on a rail line segment could increase the possibility of a collision between a passenger train and a freight train on segments where passenger and freight trains share rail lines.

##### Board Thresholds for Analysis

Here, as in the Board's recent review of the Conrail transaction, the Board threshold for freight train traffic increases is an increase of one or more freight trains per day on any rail line segment with passenger rail service. The Applicants' Operating Plan identifies 24 rail line segments that freight trains and passenger trains would share and that would experience an increase of one or more freight trains per day after the proposed CN/IC Acquisition.

##### Methods

The general approach for SEA's evaluation of the potential effects of increased freight train traffic on rail line segments that carry passenger trains was to:

- Obtain a historical nation-wide passenger train-freight train collision rate, expressed in terms of collisions per million passenger train-miles. (A train-mile is the movement of one train over a distance of 1 mile.)
- Apply this historical accident rate to the Applicants' estimated operations on their rail line segments (shared by passenger trains and freight trains where freight train traffic would increase by one or more trains per day) to predict future collision frequencies.

SEA determined a nation-wide accident rate for passenger train-freight train collisions, based on national accident occurrences that involved freight trains and passenger trains between January 1, 1986 and March 31, 1996.

The potential accident rate (0.039 collisions per million commuter and intercity passenger train-miles) includes only collisions between passenger trains and freight trains because other sources of passenger train accidents on a shared rail line segment are not

directly related to the operation of freight traffic on rail lines carrying passenger trains. Thus, SEA's accident rate does not include other types of accidents (such as fires, collisions with obstructions, and derailments without related collisions with freight trains) in the accident rate.

Using this accident rate, SEA calculated predicted accident frequencies on the 24 rail line segments that would carry both passenger and freight trains and would also experience one or more additional freight trains per day. To determine the change in risk of passenger train and freight train collisions, SEA first calculated the annual pre-Acquisition accident occurrence by multiplying the pre-Acquisition annual number of passenger train-miles on a rail line segment by the accident rate. For post-Acquisition conditions, SEA adjusted passenger-collision rate to account for the daily increase in freight train traffic over a rail line segment, and then multiplied the passenger-freight train collision rate by the annual number of post-Acquisition passenger train-miles on a rail line segment per year to determine the predicted number of accidents per year. SEA then expressed the accident frequency in terms of accident intervals. The following sections express accident intervals as the number of years between accidents (e.g., one accident in 500 years). The length of a line segment significantly affect the calculated accident interval. Appendix C, "Safety Analysis Methods and Results," presents details on the methods SEA used to perform these calculations. Attachment C-8, "Collision Estimates for Rail Line Segments with Passenger Trains and an Increase of at Least One Freight Train per Day," presents the results of these analyses.

#### **Criteria of Significance**

To assess the significance of the increased possibility of a collision between a passenger train and a freight train, SEA applied two criteria used in Conrail and other previous cases. SEA first determined whether the estimated collision rate would increase by 25 percent or more as a result of the CN/IC Acquisition. An increase of 25 percent or more would exceed the normal annual fluctuations on passenger rail accidents.

SEA then determined whether, according to prediction, an accident could occur more frequently than once every 150 years on the rail line segment. This reflects the national annual experience for passenger train accidents on the route mileage of the various passenger service providers. If the predicted change in accident frequency would exceed these two criteria, SEA considered the

segments as potential candidates for mitigation and then assessed whether mitigation would address the problem.

### Existing Conditions

The following existing conditions refer to 51 rail line segments that have both passenger and freight activity and, more specifically, the 24 segments that would meet the Board threshold of an increase of one or more freight trains per day following the proposed Acquisition.

SEA identified 51 rail line segments in eight states (Illinois, Indiana, Kentucky, Louisiana, Michigan, Mississippi, New York, and Tennessee) that currently have both freight train and passenger train activity. Under the Applicants' proposed Operating Plan, the same 51 rail line segments would continue to be used for shared passenger train and freight train activity. Between 1993 and 1997, five collisions involving passenger trains occurred on the shared rail line segments. Five states (Illinois, Kentucky, Michigan, Mississippi, and Tennessee) have a total of 24 shared passenger and freight train rail line segments that would experience an increase of one or more freight trains per day (the Board's threshold for analysis). In Appendix D, "Transportation Analysis Methods and Results," Attachment D-1, "Rail Line Segments with Passenger Service in Descending Order of Change in Freight Activity," lists all rail line segments where freight trains and passenger trains share track.

For more information, refer to Section 4.8, "Passenger Rail Operations Capacity," which describes the Acquisition-related changes in freight traffic on rail line segments that could affect passenger rail service. Figure 4-2, "System-wide Rail Line Segments with Passenger Rail Service," shows the locations of Applicant-owned rail line segments used for intercity passenger service.

### Analysis Results

Of the 51 rail line segments shared by passenger and freight trains, 24 would experience an increase in freight train traffic of one or more trains per day (the Board's threshold for environmental analysis) as a result of the proposed CN/IC Acquisition. SEA evaluated potential impacts to passenger rail over these segments. The remaining 27 rail line segments shared by passenger and freight trains would experience a decrease in the number of freight trains per day or remain unchanged. In these instances, SEA concluded that the proposed CN/IC Acquisition would reduce the risk of a passenger and freight train collision or result in no significant adverse effect.

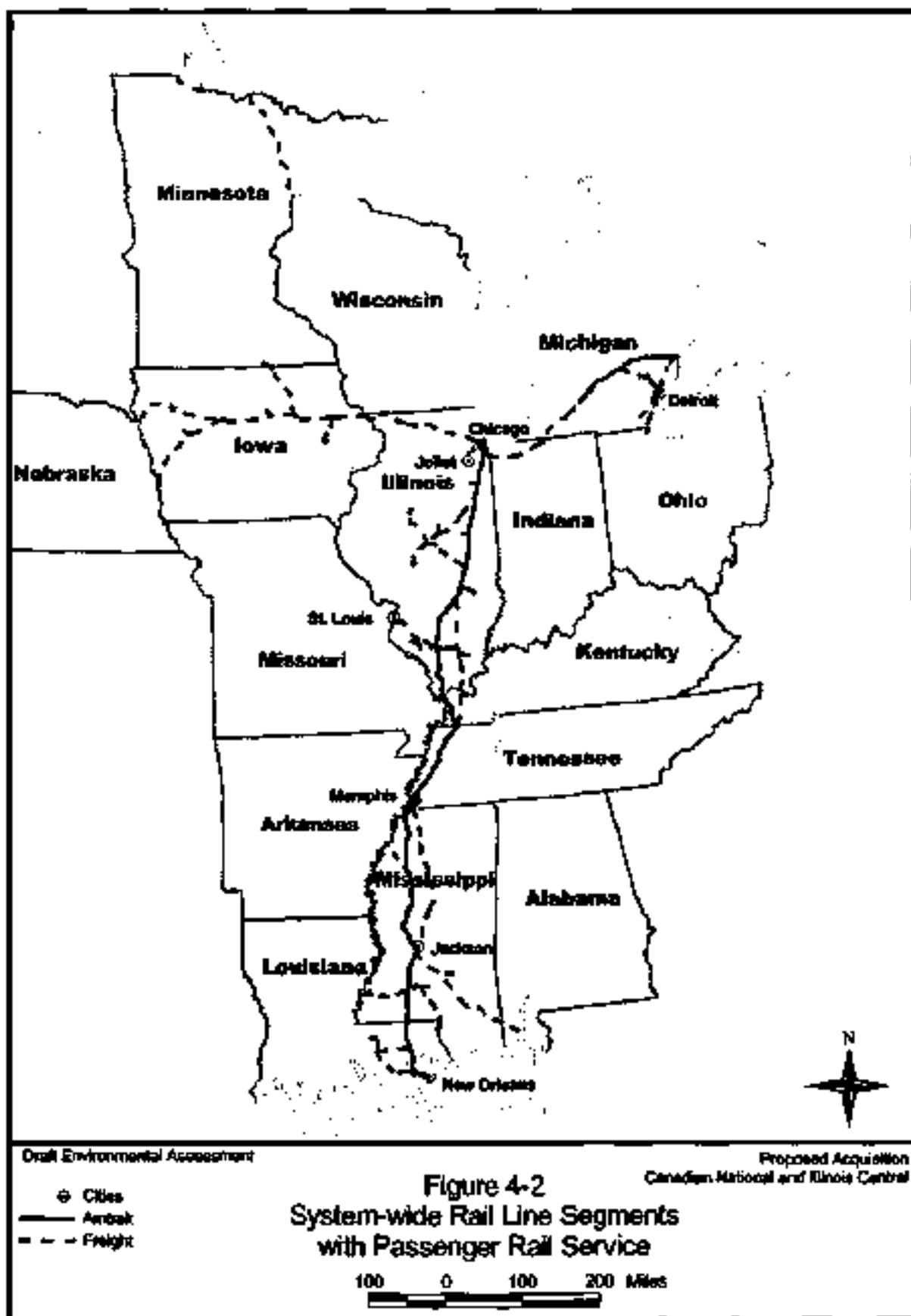


Table 4-10, "Twenty-four Rail Line Segments That Meet or Exceed the Board's Threshold for Passenger Rail Safety," summarizes the number of rail line segments where freight trains and passenger trains currently share track and experience an increase of one or more freight trains per day. Figure 4-3, "Rail Line Segments that Meet or Exceed Board Thresholds for Analysis of Passenger Rail Service," shows the shared passenger and freight train rail line segments that would experience a change in the number of freight trains per day as a result of the CN/IC Acquisition.

**TABLE 4-10  
TWENTY-FOUR RAIL LINE SEGMENTS THAT MEET OR EXCEED  
THE BOARD'S THRESHOLD FOR PASSENGER RAIL SAFETY**

Segment ID	Operating Segment		Pre-Acquisition Freight Trains Per Day	Pre-Acquisition Passenger Trains Per Day
	Between	And		
175	Harvey, IL	Homewood, IL	19.2	4
185	Homewood, IL	Matteson, IL	12.9	4
187	Matteson, IL	Kankakee, IL	12.9	4
190	Kankakee, IL	Otto, IL	13.4	4
205	Otto, IL	Gilman, IL	13.4	4
305	Gilman, IL	Champaign, IL	12.6	4
315	Champaign, IL	Macon, IL	14.2	4
340	Macon, IL	Effingham, IL	13.6	4
355	Effingham, IL	Edgewood, IL	16.4	4
360	Edgewood, IL	Centralia, IL	12.2	4
365	Centralia, IL	Reolammine, IL	14.7	4
370	Reolammine, IL	Du Quoin, IL	15.6	4
375	Du Quoin, IL	Carbondale, IL	17.0	4
380	Carbondale, IL	Cairo, IL	17.0	2
385	Cairo, IL	Fulton, KY	14.4	2
435	Fulton, KY	Dyersburg, TN	19.9	2
440	Dyersburg, TN	Woodstock, TN	19.9	2
475	West Junction, TN	Lake Cormorant, MS	16.6	2
480	Lake Cormorant, MS	Marks, MS	16.6	2

**TABLE 4-10**  
**TWENTY-FOUR RAIL LINE SEGMENTS THAT MEET OR EXCEED**  
**THE BOARD'S THRESHOLD FOR PASSENGER RAIL SAFETY**

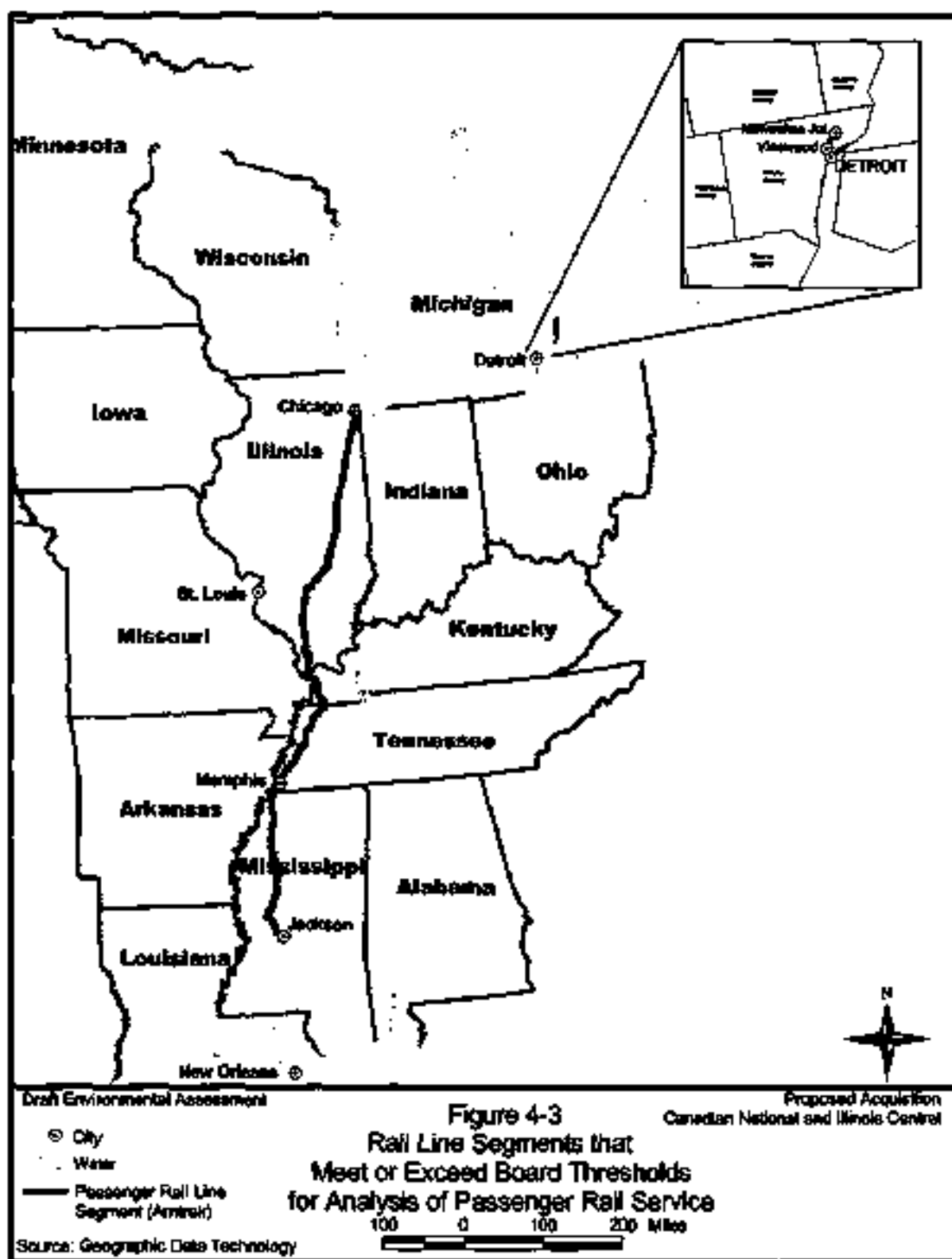
Segment ID	Operating Segment		Pre-Acquisition Freight Trains Per Day	Pre-Acquisition Passenger Trains Per Day
	Between	And		
485	Marks, MS	Swan Lake, MS	16.6	2
495	Swan Lake, MS	Greenwood, MS	16.6	2
500	Greenwood, MS	Yazoo City, MS	16.6	2
505	Yazoo City, MS	Jackson, MS	16.6	2
1140	Milwaukee Junction, MI	Vinewood, MI	21.4	4

Table 4-11, "Passenger Train-Freight Train Collision Intervals," shows the rail line segments that could experience an increase in passenger train-freight train collisions and the predicted pre- and post-Acquisition accident intervals for each segment, presented in terms of number of years between accidents. As the table indicates, some segments exist in more than one state.

SEA's first criterion of significance for passenger train safety is whether the increase in the estimated collision rate after the proposed Acquisition would be greater than 25 percent more than the current rate. Fourteen rail line segments would meet SEA's first criterion of significance (i.e., would be predicted to have an accident rate at least 25 percent greater after the proposed CN/IC Acquisition). Table 4-12, "Rail Line Segments Shared by Passenger Trains and Freight Trains that Meet or Exceed SEA's Criteria of Significance," identifies these rail line segments.

SEA applied its second criterion of significance, which is whether the rail line segments shared by passenger and freight trains would experience, based on prediction, both one accident in less than 150 years and annual increases in accidents greater than 25 percent. SEA determined that the accident intervals would exceed 150 years for all of the 24 potentially affected rail line segments.





**TABLE 4-11**  
**PASSENGER TRAIN-FREIGHT TRAIN COLLISION INTERVALS**

Segment ID	Line Segment		Miles in State	Passenger Train Miles Per Year	Pre-Acquisition Interval Between Collisions (Years)	Post-Acquisition Interval Between Collisions (Years)	Percent Change in Collision Rate
	Between	And					
ILLINOIS							
175	Harvey, IL	Homewood, IL	3.5	3,100	5,018	3,604	39
185	Homewood, IL	Marengo, IL	5.2	7,592	3,377	2,413	40
187	Marengo, IL	Kankakee, IL	26.6	38,836	660	425	36
190	Kankakee, IL	Otto, IL	5.2	7,592	3,377	2,206	53
205	Otto, IL	Gilman, IL	20.6	30,076	853	557	53
305	Gilman, IL	Champaign, IL	46.3	67,589	379	261	45
315	Champaign, IL	Mattoon, IL	45.1	65,846	389	281	38
340	Mattoon, IL	Effingham, IL	26.9	39,274	653	466	40
355	Effingham, IL	Edgewood, IL	14.9	21,754	1,179	885	33
360	Edgewood, IL	Centralia, IL	37.3	54,458	471	360	31
365	Centralia, IL	Reidsville, IL	23.5	34,310	747	597	25
370	Reidsville, IL	Du Quoin, IL	11.7	17,082	1,501	1,213	24
375	Du Quoin, IL	Carbondale, IL	18.9	27,594	929	762	22
380	Carbondale, IL	Cairo, IL	54.4	39,712	646	530	22
385	Cairo, IL	Fulton, KY	1.8	1,314	807	642	26
KENTUCKY							
385	Cairo, IL	Fulton, KY	41.7	30,441	807	642	26
435	Fulton, KY	Dyersburg, TN	1.1	803	767	602	27
MICHIGAN							
1140	Milwaukee Junction, MI	Vinewood, MI	3	4,380	5,854	5,389	9

**TABLE 4-11**  
**PASSENGER TRAIN-FREIGHT TRAIN COLLISION INTERVALS**

Segment ID	Line Segment		Miles in State	Passenger Train-Miles Per Year	Pre-Acquisition Interval Between Collisions (Years)*	Post-Acquisition Interval Between Collisions (Years)*	Percent Change in Collision Rate
	Between	And					
TENNESSEE							
475	West Junction, TN	Lake Cormorant, MS	8.2	5,983	2,311	1,887	23
440	Dyersburg, TN	Woodstock, TN	66.0	48,180	532	418	27
435	Fulton, KY	Dyersburg, TN	43.8	31,974	767	602	27
MISSISSIPPI							
480	Lake Cormorant, MS	Marks, MS	45.6	33,288	770	629	22
485	Marks, MS	Swan Lake, MS	27.3	19,929	1,287	1,051	23
495	Swan Lake, MS	Greenwood, MS	29.4	21,462	1,195	976	22
500	Greenwood, MS	Yazoo City, MS	52.7	38,471	667	544	23
475	West Junction, TN	Lake Cormorant, MS	8.2	5,986	2,311	1,887	23
505	Yazoo City, MS	Jackson, MS	44.0	32,120	798	652	22

- \* Predicted interval between collisions expressed in years.
- \* Some segments are in more than one state.

**TABLE 4-12**  
**RAIL LINE SEGMENTS SHARED BY PASSENGER TRAINS AND FREIGHT TRAINS**  
**THAT MEET OR EXCEED SEA'S FIRST CRITERIA OF SIGNIFICANCE<sup>a</sup>**

Operating Segment		Pre-Acquisition Interval between Passenger-Freight Train Collisions (Years)	Total Miles	Passenger Train-Miles per Year	Post-Acquisition Interval between Train Collisions (Years)	Percent Change in Collision Rate
Between	And					
Harvey, IL	Homewood, IL	5,018	3.5	5,110	3,604	39
Homewood, IL	Mattoon, IL	3,377	5.2	7,592	2,413	40
Mattoon, IL	Kankakee, IL	660	26.6	38,836	425	56
Kankakee, IL	Otto, IL	3,377	5.2	7,592	2,206	53
Otto, IL	Gilman, IL	853	20.6	30,076	357	53
Gilman, IL	Champaign, IL	379	46.3	67,598	261	45
Champaign, IL	Mattoon, IL	389	456.1	65,846	281	38
Mattoon, IL	Effingham, IL	653	26.9	39,274	466	40
Effingham, IL	Edgewood, IL	1,179	14.9	21,754	885	33
Edgewood, IL	Centralia, IL	471	37.3	54,458	360	31
Centralia, IL	Renickville, IL	747	23.5	34,310	397	25
Cairo, IL	Fulton, KY	807	43.5	31,755	642	26
Dyersburg, TN	Fulton, KY	767	45.8	33,434	602	27
Dyersburg, TN	Woodstock, TN	532	66.0	48,180	418	27

<sup>a</sup> SEA's first criteria of significance is a 25% increase in the predicted accident rate.

### SEA's Conclusions

Because no rail line segment would exceed both of SEA's criteria of significance, SEA concludes that the proposed CN/IC Acquisition would have no significant adverse effect on passenger rail safety. Therefore, it does not believe mitigation for any rail line segments is warranted.

### 4.3.2 Common Corridor Analysis

#### Summary of Issue

A "common corridor" is defined as an area in which passenger and freight rail lines run on adjacent parallel lines. Multiple trains can operate simultaneously within a common corridor. In contrast, on rail line segments that are shared by passenger and freight trains, only one train is generally on a section of rail line at a time. The main concern in a common corridor is that a freight train load shift or a derailment could have an adverse safety effect on a passenger train on an adjacent rail line.

**Board Thresholds for Analysis**

The Board does not have a threshold for this issue area; however, SEA considered all corridors where freight and passenger trains operate on parallel lines.

**Methods**

SEA calculated the change in the risk of a freight train encroaching upon a passenger train within the common corridor after the proposed CN/IC Acquisition. The degree of risk would depend on the distance between the freight and passenger train tracks, the track class and speed, and the length of time it would take to warn the passenger train of a freight train encroachment. SEA calculated risk for the following two scenarios:

- Accidents on the mainline.
- Accidents near train stations.

SEA calculated the change in the risk of a freight train interfering with a passenger train after the proposed CN/IC Acquisition as follows:

- First, they determined the annual freight accident rate per million train-miles for Class 3 track. Appendix C, "Safety Analysis Methods and Results," Section C.7.2 describes the approach that SEA used to compute the accident rate.
- Second, they calculated the number of additional freight train accidents that could involve an encroachment onto a passenger train track.<sup>24</sup> SEA determined the change in the probability of a freight train encroaching into the path of a passenger train within a common corridor having the characteristics described above for the mainline and near a train station.<sup>25</sup> SEA multiplied the probability rate by: (1) the number of additional freight trains that the Applicants would operate after the proposed CN/IC Acquisition, (2) the accident rate for track Class 3 (1.19 accidents per million train-miles) to predict an annual number of freight train accidents that would involve an encroachment, (3) the length of IC track, and (4) the length of time that a passenger train could be exposed.
- Finally, they calculated the change in the probability after the proposed CN/IC Acquisition that an encroaching freight

<sup>24</sup> Arthur D. Little, Inc. *Illinois Central Common Corridor Obstruction Risk Calculation*, August 28, 1998.

<sup>25</sup> *Ibid.*

train would interfere with a passenger train, by multiplying the number of passenger trains by a 2-minute vulnerability factor (considering how fast a warning can be transmitted from the freight train involved in the accident to the passenger operator, sighting distances on the passenger tracks and braking performance of the passenger train) and by the number of freight train accidents that could involve an encroachment onto a passenger train track.

In addition, SEA calculated the change in the risk after the proposed CN/IC Acquisition of a freight train hitting a passenger station platform within the common corridor. SEA calculated the probability for a freight train striking a platform within the common corridor.<sup>26</sup> SEA calculated the change in the risk by first determining the average length of time during which passengers are exposed to the potential for freight train accidents. SEA multiplied the length of time during which a passenger could be exposed to the potential for an accident by the following values to compute the risk of a freight accident involving a passenger on a platform: (1) the number of additional freight trains per day, (2) the accident rate for a Class 3 track, (3) the probability, and (4) the length of track next to the stations.

Appendix C, "Safety Analysis Methods and Results," provides details of the common corridor analysis methods that SEA used.

#### **Criteria of Significance**

SEA compared the change in common corridor accident intervals against changes in other safety-related areas (such as passenger rail line segment safety). SEA determined that a qualitative criterion is not required for the CN/IC environmental review because the common corridor intervals were so large compared to what SEA considered was significant in other safety areas.

#### **Existing Conditions**

The following existing conditions refer to the one common corridor SEA identified for analysis. SEA identified the common corridor in Illinois, where Metra commuter trains operate on rail lines that are parallel to IC's north-south main line for approximately 11.7 miles south of Harvey, Illinois.

Six rail lines are in the common corridor. Metra Electric owns the two rail lines on the west side of the corridor and uses these rail lines for Metra commuter services. IC owns the four eastern rail lines and uses them for freight and Amtrak passenger traffic. At

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<sup>26</sup> *Ibid.*

IC's Moyers Intermodal Terminal in Harvey, Illinois, the same six north-south rail lines are separated from additional rail lines by a tree line; the six common corridor rail lines are west of the trees.

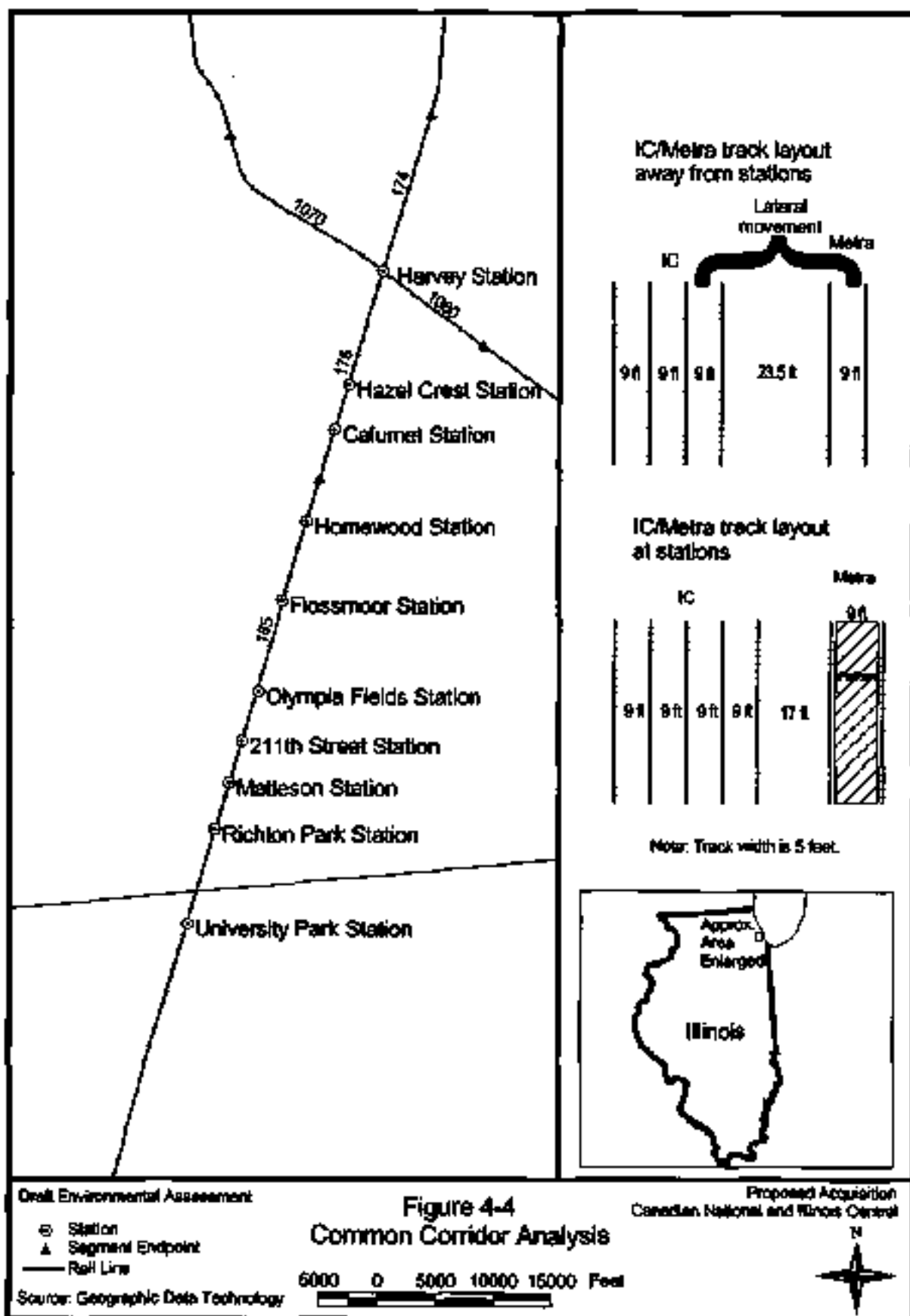
SEA measured the distance between the rail lines on which the commuter trains travel and the rail lines on which the freight trains travel. Generally, the distance between the closest track on the Metra rail line and the closest track on the IC rail line exceeds 23 feet. The distance is less than 23 feet as the rail lines approach train stations or the Moyers Intermodal Terminal at Harvey, Illinois. Train stations on the common corridor are as follows: Harvey, Hazel Crest, Calumet, Homewood, Flossmoor, Olympia Fields, 21<sup>st</sup> Street, Matteson, Richton Park, and University Park.

SEA measured several locations immediately north and south of the intermodal facility and at two train stations on the common corridor (Flossmoor and Olympia Fields). The distance between the closest Metra and IC rail lines at the Moyers Intermodal Terminal is 8 feet 9 inches. Near the two stations the distance between the closest Metra rail line and IC rail line is approximately 9 feet. See Figure 4-4, "Common Corridor Analysis."

#### **Analysis Results**

The commuter traffic within the corridor would not change as a result of the proposed CN/IC Acquisition. Amtrak operates two trains per day, 7 days per week, in both directions (north and south) in the corridor. Metra operates an average of 48 trains per day, 7 days per week, in the common corridor. As a result of the proposed CN/IC Acquisition, freight train traffic would increase by an average of 7.6 trains per day between Harvey, Illinois intermodal facility and Homewood station; 5.1 trains per day between Homewood and Matteson, Illinois; and 7.1 trains per day between Matteson and University Park, Illinois.

SEA determined that the frequency of an accident resulting from passenger trains and freight trains operating in the common corridor between Harvey, Illinois and University Park, Illinois would be small; Table 4-13, "Common Corridor Analysis," presents the results of SEA's analysis. Attachment C-10, "Common Corridor Analysis," in Appendix C, "Safety Analysis Methods and Results," provides additional detail of SEA's analysis.





**TABLE 4-13  
COMMON CORRIDOR ANALYSIS**

Operating Segment		Miles	Change in the Number of Freight Trains Per Day	Interval Between Accidents on Mainlines (Years)	Interval Between Accidents near Stations (Years)	Interval Between Accidents Involving Platforms (Years)
Between	And					
Harvey, IL	Homewood, IL	3.5	7.6	3,546	11,839	2,875
Homewood, IL	Matteson, IL	5.2	5.1	3,297	17,390	4,223
Matteson, IL	University Park, IL	3	7.1	4,047	23,037	6,080

**SEA's Conclusions**

SEA concludes that the increased risk of an accident resulting from increased freight rail operations on the common corridor near Harvey is small. Therefore, SEA is not recommending mitigation to address common corridor issues.

**4.4 HIGHWAY/RAIL AT-GRADE CROSSING EMERGENCY VEHICLE RESPONSE**

SEA evaluated the potential for increases in freight rail traffic to adversely affect the response time of emergency vehicles, such as fire engines, ambulances, and police cars.

In previous cases, SEA evaluated the effects on emergency vehicle response time when Acquisition-related changes in freight train traffic would meet or exceed the Board-specified threshold level and communities presented specific information to SEA about potential local impacts. The Board's threshold for evaluating emergency vehicle response delay is an increase of eight or more trains per day. In this case, based on SEA's review of the Applicants' Operating Plan, no increase in train traffic would occur on any rail line segment that would exceed the Board-specified threshold of eight trains per day. Because train traffic would not exceed eight trains per day on any rail line segment, SEA concludes that no potential exists for a significant impact to emergency vehicle response time.

**4.5 HIGHWAY/RAIL AT-GRADE CROSSING SAFETY**

SEA considered whether increases in rail activity could affect safety at highway/rail at-grade crossings. The Board's threshold for evaluating highway/rail at-grade crossing safety is an increase of eight or more trains per day. If train traffic would increase by eight or more trains per day on a rail line segment, SEA would evaluate the change in risk of train-vehicle accidents at highway/rail at-grade crossings along the segment.

In this proposed CN/IC Acquisition, SEA reviewed the Applicants' Operating Plan and determined no rail line segments would experience an increase in train traffic of eight or more

trains per day. Because train traffic would not exceed the Board's thresholds for environmental analysis, SEA concludes that no potential exists for significant impact to highway/rail at-grade crossing safety.

#### **4.6 HIGHWAY/RAIL AT-GRADE CROSSING DELAY**

The Board's regulations at 49 CFR 1105.7(e)(2) require an analysis of potential effects of the proposed CN/IC Acquisition on regional or local transportation systems and patterns. Section 4.6 presents the results of SEA's analysis of potential effects on vehicle delays at highway/rail at-grade crossings. Vehicle delays can occur at locations where rail line segments cross roadways and vehicles must wait for trains to pass. Vehicle delays do not occur where rail line segments pass over or under roadways. Based on the following analysis, SEA concludes that the proposed CN/IC Acquisition would not significantly affect vehicle delay at highway/rail at-grade crossings; therefore, mitigation is not warranted.

##### **Board Thresholds for Analysis**

SEA used the Board's thresholds for environmental analysis to identify rail line segments with sufficient increases in freight train activity to warrant evaluating vehicle delays at highway/rail at-grade crossings. The Board's thresholds are as follows:

- In air quality nonattainment areas: a rail line segment with three or more additional freight trains per day or a 50 percent increase in annual gross ton-miles.
- In air quality attainment areas or Class I areas: a rail line segment with eight or more additional freight trains per day or a 100 percent increase in annual gross ton-miles.

For rail line segments that would meet or exceed either of these thresholds, SEA evaluated vehicle delays for the following highway/rail at-grade crossings:

- All highway/rail at-grade crossings with an average daily traffic (ADT) volume of 5,000 vehicles per day or greater.
- All highway/rail at-grade crossings within 800 feet of another highway/rail at-grade crossing, regardless of its ADT volume. The Applicants analyzed these closely spaced highway/rail at-grade crossings, individually and as a group, because of the potential for combined effects that could result from their close spacing.

As in past cases, SEA considers potential vehicle delays to be minimal if the ADT volume is less than 5,000 vehicles per day at crossings separated by more than 800 feet.

SEA identified 48 highway/rail at-grade crossings on eight rail line segments that would meet the Board's thresholds for analysis. All of the 48 highway/rail at-grade crossings are in Illinois.

## Methods

For each highway/rail at-grade crossing analyzed, SEA estimated the potential effects of both single-train and multiple-train events, as follows.

**Single-Train Events.** SEA used the Applicants' Operating Plan and the Federal Railroad Administration (FRA) highway/rail at-grade crossing database to determine pre-Acquisition and post-Acquisition values for the average train length, train speed, and number of trains per day for each highway/rail at-grade crossing analyzed. SEA used these factors to calculate the blocked crossing time per train, which is the time required for a train to pass a highway/rail at-grade crossing. Next, using the FRA highway/rail at-grade crossing database and field visits, SEA determined the number of roadway lanes, average vehicle arrival rate, and vehicle departure rate for each highway/rail at-grade crossing. SEA then calculated the crossing delay per stopped vehicle, using SEA's formula developed for the Conrail Acquisition, for pre-Acquisition and post-Acquisition conditions. The formula included these factors and the estimated blocked crossing time per train.

**Multiple-Train Events.** SEA also evaluated vehicle delays from multiple-train events by estimating the change in level of service (LOS) that would occur following the proposed CN/IC Acquisition for each highway/rail at-grade crossing analyzed. The LOS is a grading system that the Transportation Research Board<sup>27</sup> developed to indicate traffic congestion at signalized intersections. LOS is expressed in terms of a letter grade ranging from A (free flowing traffic) to F (severely congested traffic). The LOS is based on the average delay for all vehicles passing the highway/rail at-grade crossing during a 24-hour day. SEA calculated the average delay for all vehicles before and after the proposed Acquisition using the estimated number of freight trains, the estimated blocked crossing time per train, and the estimated crossing delay per stopped vehicle. SEA compared the estimated average delay for all vehicles to the LOS ratings in Table 4-14, "Traffic Level of Service Ratings," to determine the LOS rating for each analyzed highway/rail at-grade crossing before and after the proposed CN/IC Acquisition.

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<sup>27</sup> Transportation Research Board. *Highway Capacity Manual, Special Report 209*, 3<sup>rd</sup> Edition, 1994.

Appendix D, "Transportation Analysis Methods and Results," Section D.5.2, "Transportation Effects at Highway/Rail At-grade Crossings," gives a more detailed description of the Applicants' analytical methods.

**TABLE 4-14**  
**TRAFFIC LEVEL OF SERVICE RATINGS**

Level of Service (LOS)	Average Delay for All Vehicles (in seconds)
A	≤5.0
B	>5.0 to ≤15.0
C	>15.0 to ≤25.0
D	>25.0 to ≤40.0
E	>40.0 to ≤60.0
F	>60.0

#### Criteria of Significance

SEA determined that vehicle delay from single-train events would be significant if the crossing delay per stopped vehicle increased by 30 seconds or more following the proposed CN/IC Acquisition. SEA developed this criterion of significance in its recent review of the Conrail transaction.

SEA further determined that vehicle delay from multiple-train events would be significant if one of the following conditions existed:

- The post-Acquisition LOS would be E or F (regardless of the LOS before the proposed CN/IC Acquisition).
- The LOS would decrease to D (or worse) from a LOS of C (or better) before the proposed CN/IC Acquisition.

If the analysis results indicate that delays resulting from the proposed CN/IC Acquisition would exceed SEA's criteria of significance, then SEA would consider whether mitigation is available to address the potential impacts.

#### Existing Conditions

SEA's analysis identified the following conditions for the 48 highway/rail at-grade crossings that meet the Board's thresholds for environmental analysis. SEA analyzed 13 highway/rail at-grade crossings with ADT volumes exceeding 5,000 vehicles per day and 13 groups of highway/rail at-grade crossings that meet the

criteria for closely spaced highway/rail at-grade crossings. These 13 groups contained a total of 37 individual highway/rail at-grade crossings, including two highway/rail at-grade crossings with ADT volumes greater than 5,000 vehicles per day. All of these are in Illinois. Table 4-15, "Highway/Rail At-grade Crossings Analyzed in Illinois," lists the highway/rail at-grade crossings that meet or exceed the Board's thresholds for each county in Illinois.

**TABLE 4-15  
HIGHWAY/RAIL AT-GRADE CROSSINGS ANALYZED IN ILLINOIS**

County	Highway/Rail At-grade Crossings with ADT Volume of 5,000 Vehicles or Greater	Highway/Rail At-Grade Crossings within 500 feet of Another Highway/Rail At-grade Crossing	Number of Highway/Rail At-grade Crossings Analyzed <sup>a</sup>
Cook	7	2	8
DeWitt	1	15	16
Ford	0	14	14
Kankakee	3	2	4
Logan	0	2	2
Sangamon	1	0	1
Will	1	2	3
<b>TOTAL</b>	<b>13</b>	<b>37</b>	<b>48</b>

<sup>a</sup> In Cook and Kankakee counties, one highway/rail at-grade crossing meets both thresholds.

SEA determined that all highway/rail at-grade crossings had an existing LOS of A, corresponding to an average delay for all vehicles of less than 5 seconds. The present crossing delay per stopped vehicle ranges from 39 seconds to 2 minutes, 44 seconds at these highway/rail at-grade crossings.

#### Analysis Results

SEA's delay analysis determined that the LOS would drop at only two locations as a result of the proposed CN/IC Acquisition. Pulaski Road in Cook County and Elizabeth Street in De Witt County would experience a drop in LOS from A to B. The remaining 46 highway/rail at-grade crossings analyzed maintain a LOS of A before and after the proposed CN/IC Acquisition.

The increase in average delay for all vehicles from pre-Acquisition to post-Acquisition would range from 0 to 3.5 seconds for all highway/rail at-grade crossings.

The increase in crossing delay per stopped vehicle before and after the proposed CN/IC Acquisition would range from 5 to 28 seconds for all highway/rail at-grade crossings.

Table 4-16, "Highway/Rail At-grade Crossing Vehicle Delay," lists these individual highway/rail at-grade crossings in detail. The table also presents the location and use of each highway/rail at-grade crossing, the crossing delay per stopped vehicle, average delay for all vehicles, and LOS as well as the change in crossing delay per stopped vehicle and the change in average delay for all vehicles before and after the proposed Acquisition.

Attachment D-2, "Highway/Rail At-grade Crossing Vehicle Delay and Queues," of Appendix D, "Transportation Analysis Methods and Results," presents the Applicants' detailed analysis of vehicle delays for these highway/rail at-grade crossings.

#### **SEA's Conclusion**

SEA concludes that the proposed CN/IC Acquisition would not significantly affect vehicle delay at highway/rail at-grade crossings; therefore, mitigation is not warranted.

TABLE 4-10  
HIGHWAY/RAIL AT-GRADE CROSSING VEHICLE DELAY

City	Street Name	ADT	Pre-Application				Post-Application				Change In	
			Trains per day	Crossing Delay per Stopped vehicle (minutes)	Average Delay for All vehicles (seconds)	Level of Service	Trains per day	Crossing Delay per Stopped vehicle (minutes)	Average Delay for All Vehicles (seconds)	Level of Service	Crossing Delay per Stopped vehicle (minutes)	Average Delay for All vehicles (seconds)
COOK COUNTY												
CHICAGO	PULASKI RD	27,400	8.7	1.42	4.87	A	8.1	2.12	5.40	B	0.29	1.21
CHICAGO	HARLEM AVE	15,800	6.6	1.25	1.56	A	6.8	1.50	2.29	A	0.20	1.29
CHICAGO	59th ST	14,800	4.8	1.18	1.26	A	4.9	1.26	2.44	A	0.17	1.07
CHICAGO	DESPERADO AVE	12,600	5.4	1.19	1.38	A	5.0	1.26	2.46	A	0.17	1.08
CHICAGO	DOUGLASS RD/31ST ST	24,200	5.4	1.27	1.40	A	5.0	1.45	2.81	A	0.18	1.15
CHICAGO	DOUGLASS RD/1ST AVE	24,600	4.5	1.41	1.62	A	4.9	1.81	3.00	A	0.20	1.26
CHICAGO	10TH/31ST AVE	12,800	4.4	1.36	1.33	A	4.8	1.22	2.29	A	0.17	1.04
CHICAGO	DOUGLASS AVE	20,800	4.0	1.25	1.26	A	4.8	1.24	2.28	A	0.20	1.25
CHICAGO	DOUGLASS RD/1ST AVE	250	4.0	1.65	1.21	A	4.8	1.20	2.17	A	0.45	0.29
DE WITT COUNTY												
CLINTON	US ROUTE 51	8,200	1.7	0.60	0.21	A	2.1	0.01	0.58	A	0.12	0.26
FARMER CITY	STATE	10	4.9	0.72	0.08	A	2.2	0.62	0.20	A	0.09	0.18
FARMER CITY	108th	50	4.9	0.73	0.08	A	2.2	0.62	0.20	A	0.09	0.18
FARMER CITY	MAIN ST	800	4.9	0.73	0.08	A	2.2	0.62	0.20	A	0.09	0.18
FARMER CITY	US 180	1,800	4.9	0.76	0.08	A	2.2	0.64	0.20	A	0.09	0.18
FARMER CITY	10th St	1,180	4.9	0.74	0.08	A	2.2	0.64	0.20	A	0.09	0.18
CLINTON	LAUREL ST	2,850	2.9	1.22	0.25	A	4.6	1.75	1.69	A	0.24	1.01
CLINTON	CLARK ST	800	2.5	1.08	0.08	A	4.6	3.14	0.01	B	0.40	2.43
CLINTON	ANDERSON ST	1,400	4.7	1.49	0.29	A	2.1	2.20	2.45	A	0.21	1.44
CLINTON	WILSON ST	480	1.7	1.48	0.08	A	2.1	1.89	1.47	A	0.28	0.87
CLINTON	CLARK ST	2,700	1.7	1.28	0.44	A	2.1	1.47	1.08	A	0.19	0.62
CLINTON	QUINCY ST	175	1.7	1.45	0.21	A	2.1	1.21	0.75	A	0.15	0.44
CLINTON	JACKSON ST	800	1.7	0.85	0.25	A	2.1	1.09	0.59	A	0.13	0.34
CLINTON	WILSON ST	700	1.7	0.85	0.21	A	2.1	0.67	0.28	A	0.21	0.28
CLINTON	WILSON ST	1,250	1.7	0.82	0.21	A	2.1	0.58	0.40	A	0.22	0.28
CLINTON	WILSON ST	800	1.7	0.85	0.21	A	2.1	0.67	0.40	A	0.21	0.28
DE WITT COUNTY												
ROBERTS	WILSON ST	100	4.9	0.72	0.08	A	2.2	0.62	0.20	A	0.09	0.18
ROBERTS	MAIN ST	500	4.9	0.73	0.08	A	2.2	0.62	0.20	A	0.09	0.18
ROBERTS	108th	200	4.9	0.73	0.08	A	2.2	0.62	0.20	A	0.09	0.18
ROBERTS	108th	40	4.9	0.73	0.08	A	2.2	0.62	0.20	A	0.09	0.18
ROBERTS	WILSON RD	74	4.9	0.73	0.08	A	2.2	0.62	0.20	A	0.09	0.18
WELDON	MAIN AT CROSBY	100	0.1	0.72	0.08	A	2.2	0.62	0.20	A	0.09	0.18
WELDON	CLARK ST	140	4.9	0.73	0.08	A	2.2	0.62	0.20	A	0.09	0.18
CARSON CITY	CLARK ST	270	4.9	0.72	0.22	A	2.2	1.40	0.75	A	0.18	0.55
CARSON CITY	CLARK ST	250	4.9	1.01	0.22	A	2.2	1.40	0.75	A	0.18	0.53
CARSON CITY	CLARK ST	250	4.9	1.21	0.22	A	2.2	1.40	0.75	A	0.18	0.52
CARSON CITY	CLARK ST	250	4.9	1.22	0.22	A	2.2	1.40	0.75	A	0.18	0.52
CARSON CITY	CLARK ST	4,000	4.9	1.21	0.22	A	2.2	1.40	0.75	A	0.18	0.52
CARSON CITY	CLARK ST	400	4.9	1.21	0.22	A	2.2	1.40	0.75	A	0.18	0.52
CARSON CITY	CLARK ST	2,200	4.9	1.21	0.22	A	2.2	1.40	0.75	A	0.18	0.52
HAMPSHIRE COUNTY												
WANTON	10th ST	3,800	12.1	0.71	0.29	A	26.0	0.75	1.65	A	0.08	0.33
WANTON	10th ST	3,800	12.1	0.71	0.29	A	26.0	0.75	1.65	A	0.08	0.33
WANTON	10th ST	3,800	12.1	0.70	0.29	A	26.0	0.75	1.65	A	0.08	0.33
WANTON	10th ST	1,600	12.1	0.62	0.29	A	26.0	0.75	1.65	A	0.08	0.33
LOUISIANA COUNTY												
LOUISIANA	LOUISIANA ST	400	1.7	0.73	0.15	A	2.1	0.62	0.25	A	0.09	0.20
LOUISIANA	LOUISIANA ST	950	1.7	0.74	0.15	A	2.1	0.62	0.25	A	0.09	0.20
SPRINGFIELD COUNTY												
SPRINGFIELD	N. GRAND	17,700	2.1	0.80	0.25	A	2.7	1.41	0.84	A	0.14	0.35
WILL COUNTY												
SPRINGFIELD	STUENKEL ROAD	7,000	12.9	0.74	0.30	A	26.0	0.82	1.92	A	0.08	0.36
SPRINGFIELD	MAIN ST	1,200	12.9	0.66	0.30	A	26.0	0.70	1.79	A	0.08	0.35
SPRINGFIELD	COMING ST	400	12.9	0.65	0.31	A	26.0	0.72	1.77	A	0.08	0.35

## 4.7 TRAFFIC AND ROADWAY SYSTEMS

Acquisition-related truck-to-rail diversions could affect traffic and roadway systems on a national, regional, and local level. Section 4.7 presents the results of SEA's evaluation of the potential effects of the proposed CN/IC Acquisition on rail freight traffic.

SEA evaluated whether:

1. The proposed CN/IC Acquisition would affect the national and regional highway systems resulting from increased activity at intermodal facilities.
2. The proposed CN/IC Acquisition would affect local roadways near these facilities.

Based on its analysis, SEA concludes that the proposed CN/IC Acquisition would benefit national and regional traffic and roadway systems; therefore, mitigation is not warranted. In its analysis of local roadways, SEA determined that only the Moyers/Chicago Gateway intermodal facility in Harvey, Illinois would meet or exceed the Board's thresholds for environmental analysis. Based on its analysis of this facility, SEA concludes that the proposed CN/IC Acquisition would not significantly affect local traffic and roadway systems near the Moyers/Chicago Gateway intermodal facility; therefore, mitigation is not warranted.

### 4.7.1 National and Regional Highway System Traffic and Roadway Effects

#### Summary of Issue

The Applicants contend that shippers could divert freight from trucks to rail following the CN/IC Acquisition because the consolidated system would be more cost-effective than highway shipment. With fewer freight trucks traveling on the highways, the Applicants predict a reduction in highway-related costs and traffic congestion.

#### Board Thresholds for Analysis

For this system-wide analysis, SEA considered changes in rail activity over all of the rail segments in the U.S. portion of the proposed system. The Board does not have specific thresholds for analysis of traffic and roadway effects on the national and regional highway system.

#### Methods

SEA evaluated the effects of the proposed CN/IC Acquisition on regional and national highway systems, using their estimate for the annual number of truck-to-rail diversions. To estimate the reduction in truck-miles on major U.S. highways, SEA used the origins and destinations of these diverted truck trips. SEA used the reductions in truck-miles to estimate highway-related cost savings from truck-to-rail diversions, as well as fuel savings (see Section 4.10, "Energy") and safety benefits (see Section 4.1, "Freight Rail Operations Safety"). SEA used estimates for



highway-related costs (e.g., pavement maintenance, congestion reduction, accident costs) for various combinations of vehicle classes and highway classes developed by the Federal Highway Administration<sup>38</sup> to estimate the potential highway-related cost savings from a reduction in truck-miles on major U.S. highways. SEA estimated that the savings would be approximately 8.89 cents for each truck-mile removed from the highway system.

Appendix D, "Transportation Analysis Methods and Results," provides a more detailed description of these methods.

**Criteria of Significance**

SEA did not apply a significance criterion for potential effects on the national or regional highway system because truck-to-rail diversions would reduce the net number of highway miles traveled by trucks on these highway systems.

**Existing Conditions**

Trucks transport approximately 86 percent of the 2.5-million-ton annual volume of freight between the Canadian provinces of Quebec and Ontario and the south central United States. Rail-truck intermodal transport accounts for the remaining 14 percent. SEA estimated that approximately 627,000 loaded truck trailers (i.e., loads) moved by highway or combined rail-truck intermodal transport during 1996 in the area that would be covered by the proposed CN/IC Acquisition.<sup>39</sup> These truck trailer movements were primarily between Quebec, Ontario, and Michigan in the north and the Mississippi Valley, east Texas, and the Mexican border in the south. Of this traffic, SEA estimated that approximately 546,000 loads traveled entirely by highway. The three major truck movement corridors are as follows:

- Approximately 24,000 annual highway loads travel an average distance of 1,500 miles between Quebec and major markets in south central U.S.
- Approximately 157,000 annual highway loads travel an average distance of 1,400 miles between Ontario and major markets in south central U.S.

<sup>38</sup> U.S. Department of Transportation, Federal Highway Administration. *Federal Highway Cost Allocation Study*, 1997.

<sup>39</sup> Bryan, Joseph G. B. *Verified Statement in Railroad Control Application*, Volume 2, 1998, pp. 66-101.

- Approximately 365,000 annual highway loads travel an average distance of 1,200 miles between Michigan and major markets in south central U.S.

### Analysis Results

SEA estimated that truck-to-rail diversions would result in an annual reduction of 28,085 truck loads of freight from major U.S. highways (about 5 percent of the total highway loads between Quebec, Ontario, Michigan and markets in the south central U.S.).<sup>31</sup> SEA estimated that these diversions would represent a reduction in national and regional truck traffic of about 30.5 million truck-miles on major U.S. highways. Attachment D-4, "Truck Miles Removed from Highway System," of Appendix D, "Transportation Analysis Methods and Results," presents a breakdown of the estimated truck-mile reductions by state and county.

The national and regional reduction in truck traffic on major highways would reduce highway-related costs and traffic congestion. The reduction in highway miles traveled by trucks would result in savings of highway-related costs such as pavement maintenance and costs related to vehicle congestion, accidents, and noise abatement. SEA estimated that the proposed CN/IC Acquisition would result in annual savings of about \$2.7 million in highway-related costs. Attachment D-4, "Truck Miles Removed from Highway System," of Appendix D, "Transportation Analysis Methods and Results," presents a breakdown of estimated highway-related cost savings by state and county. While the numbers of trucks eliminated from highways because of the proposed CN/IC Acquisition would be relatively small (in comparison to the total traffic volumes on these highways), the lower truck traffic volume would result in reduced road congestion on these highways during periods of peak traffic flow.

This reduction in truck traffic on major highways would also have benefits related to fuel consumption and safety. Section 4.10, "Energy," describes fuel consumption benefits; and Section 4.1, "Freight Rail Operations Safety," describes safety benefits from truck-to-rail diversions.

### SEA's Conclusions

SEA concludes that the proposed CN/IC Acquisition would have a beneficial effect on national and regional traffic and roadway systems and that mitigation is not warranted.

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<sup>31</sup> Bryan, Joseph G. B. *Verified Statement in Railroad Control Application*, Volume 2, 1998, pp. 66-101.

## 4.7.2 Local Roadway Effects

### Summary of Issue

The Applicants state that an increase of freight traffic on some rail line segments due to freight diversions from truck transport to rail transport would increase the truck traffic on local roadways adjacent to some intermodal facilities. This increase in truck traffic would cause increased traffic congestion on these local roadways.

### Board Thresholds for Analysis

SEA evaluated traffic congestion for any intermodal facilities with sufficient increases in truck traffic to evaluate traffic congestion on local roadways serving those intermodal facilities. The Board's thresholds are as follows:

- An increase of 50 or more over-the-road (OTR) trucks per day.
- An increase of 10 percent (or greater) in ADT volume on an affected roadway.

SEA identified only one facility, the Moyers/Chicago Gateway intermodal facility, that would exceed the Board's thresholds for environmental analysis.

### Methods

Because the number of containers and trailers transported to and from the Applicants' intermodal facilities by rail would change following the proposed CN/IC Acquisition, the amount of OTR truck traffic on local roadways near these intermodal facilities would also change. SEA estimated the change in intermodal rail freight traffic at each of the Applicants' intermodal facilities. Based on these changes, the Applicants estimated the corresponding change in local OTR truck traffic. SEA then analyzed truck traffic at intermodal facilities and roads where the projected number of OTR trucks exceeded the Board's thresholds for environmental analysis. For facilities that would meet or exceed either of these thresholds, SEA estimated the percent increase in ADT volume for affected roadways by adding the additional OTR truck traffic to the existing ADT volume for those roadways. SEA obtained ADT volume data from local or state transportation officials for the roads that OTR trucks would most likely travel between an intermodal facility and the nearest major highway.

### Criteria of Significance

SEA did not establish specific criteria to identify significant effects from activity changes at intermodal facilities. SEA evaluated each

intermodal facility on a case-by-case basis, considering the percent increase in ADT and the traffic volume capacity of the affected roadway to determine whether the projected changes in truck traffic volume would have a significant effect.

### Existing Conditions

The following existing conditions describe activities at the Moyers/Chicago Gateway intermodal facility, which met the Board's threshold for environmental analysis. However, based on the Applicants' estimates of operational changes at intermodal facilities, SEA determined that this is the only facility where Acquisition-related activities would exceed the Board's threshold for an increase in OTR truck activity and thus warranted further analysis. None of the Applicants' facilities would exceed the Board's threshold for an increase in ADT volume on an affected roadway (i.e., exceed an increase of 10 percent ADT volume on any affected roadway).

IC currently operates the Moyers intermodal facility, north of Interstate 80 and west of State Route 1 in Harvey, Illinois. CN currently operates the Gateway intermodal facility, located next to the northwest boundary of the Moyers facility. Approximately 346 trucks per day use the combined Gateway and Moyers facilities. Trucks currently reach these facilities by several routes, depending on their origin or destination. (See Figure 4-5, "Truck Routes to and from Moyers/Chicago, Illinois Gateway Intermodal Terminal.") Table 4-17, "Roadways Used by Freight Trucks Near the Moyers/Chicago Gateway Intermodal Terminal," presents the affected roadways and their associated ADT volume.

**TABLE 4-17  
ROADWAYS USED BY FREIGHT TRUCKS NEAR  
THE MOYERS/CHICAGO GATEWAY INTERMODAL  
TERMINAL**

Road	ADT <sup>a</sup>
State Route 83	25,300
State Route 1	17,800 to 26,900 <sup>b</sup>
State Route 6	27,300 to 27,900 <sup>b</sup>
155 <sup>th</sup> Street	3,492 <sup>c</sup>
Commercial Avenue	1,624 <sup>c</sup>
Park Avenue	6,987 <sup>c</sup>
167 <sup>th</sup> Street	3,087 <sup>c</sup>

**TABLE 4-17**  
**ROADWAYS USED BY FREIGHT TRUCKS NEAR**  
**THE MOYERS/CHICAGO GATEWAY INTERMODAL**  
**TERMINAL**

157 <sup>th</sup> Street	3,201 <sup>a</sup>
Center Street	3,111 <sup>a</sup>

- <sup>a</sup> ADT volume from the Illinois Department of Transportation, 1994.
- <sup>b</sup> ADT values were available for several points on the affected road. This table shows the relevant range of ADT values.
- <sup>c</sup> Traffic volume data from the City of Harvey Police Department, Traffic Division for 1995 - 1998. Vehicle counts for 4:00 a.m. to 9:00 p.m.

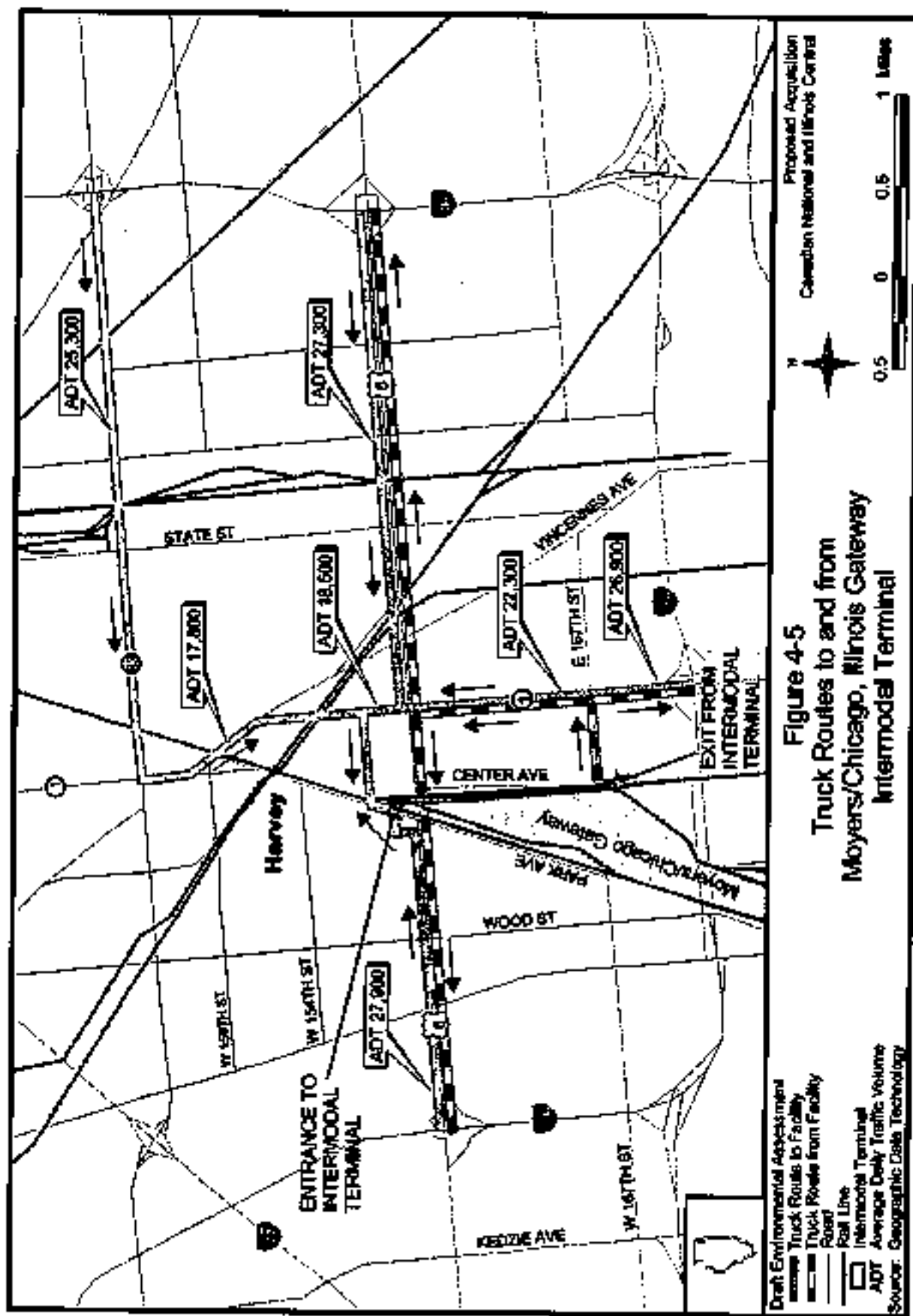
### Analysis Results

The Applicants would merge the Moyers and Gateway intermodal facilities following the proposed CN/IC Acquisition and would name the combined facility, the Moyers Intermodal Terminal (Moyers). The proposed CN/IC Acquisition would cause activity at the Moyers facility to change because of new truck-to-rail diversions, extended hauls, and single line service. The number of containers and trailers transported by rail would change; therefore, OTR truck traffic volumes would also change. Trucks would use the current entrance to CN's Gateway intermodal facility from Commercial Avenue to enter the Moyers facility, and trucks would use IC's current exit on Center Street to leave Moyers.

SEA estimates that the Moyers facility would experience an increase of 88 trucks that would enter and leave the facility per day as a result of the proposed CN/IC Acquisition. Based on round trip activity, this increase of 88 trucks per day corresponds to 176 additional one-way truck trips on local roadways serving Moyers. SEA estimates that truck traffic would be divided equally between each of the primary truck routes to or from the facility as shown in Figure 4-5, "Truck Routes to and from Moyers/Chicago, Illinois Gateway Intermodal Terminal."<sup>31</sup>

SEA determined that the total daily increase in truck traffic would be less than 1 percent of the ADT volume on major roadways used by trucks to enter and leave this facility. Some secondary streets

<sup>31</sup> The Applicants assumed that 25 percent of the trucks arriving at the Moyers facility would use each of four primary routes, and that 33 percent of the trucks leaving the Moyers facility would use each of the three primary routes.



near the Moyers entrance and exit would experience a greater percentage increase in traffic volume (ranging from less than 1 percent to about 5.4 percent). SEA determined that traffic effects on these secondary streets would be minor because they are used primarily by vehicles serving commercial and industrial businesses along these streets. Based on its analysis, SEA determined that this increase in truck traffic would not significantly affect area roadways. Table 4-18, "Traffic Analysis Summary for the Moyers/Chicago Gateway Intermodal Facility," presents a summary of SEA's traffic analysis for the roadways used by truck traffic near Moyers Intermodal Terminal.

**TABLE 4-18**  
**TRAFFIC ANALYSIS SUMMARY FOR THE**  
**MOYERS/CHICAGO GATEWAY INTERMODAL FACILITY**

Roadway Name	Roadway ADT <sup>a</sup>	Increased Daily Truck Trips Using Roadway	Roadway ADT Percent Increase
State Route 83	25,300	22	0.09
State Route 1, north of Moyers entrance	17,800	22	0.12
State Route 1, south of Moyers entrance	18,500	44	0.24
State Route 6, west of State Route 1	27,900	51	0.19
State Route 6, east of State Route 1	27,300	51	0.19
State Route 1, south of State Route 6 and north of Moyers exit	22,300	81	0.36
State Route 1, north of Interstate 80 and south of Moyers exit	26,900	51	0.19
155 <sup>th</sup> Street, near Moyers entrance	3,492	88	2.5
157 <sup>th</sup> Street, between South Park Ave and Commercial Avenue	3,201	22	0.63
Commercial Avenue, near Moyers entrance	1,624	88	5.4
Park Avenue, between State Route 1 and 155 <sup>th</sup> Street	6,987	22	0.31

**TABLE 4-18**  
**TRAFFIC ANALYSIS SUMMARY FOR THE**  
**MOYERS/CHICAGO GATEWAY INTERMODAL FACILITY**

Roadway Name	Roadway ADT <sup>a</sup>	Increased Daily Truck Trips Using Roadway	Roadway ADT Percent Increase
167 <sup>th</sup> Street between State Route 1 and Center Street	3,087	88	2.9
Center Street, near the Moyers exit	3,111	88	2.8

<sup>a</sup> The Illinois Department of Transportation and the Harvey Police Department Traffic Division provided the roadway ADT figures.

<sup>b</sup> Refers to the ADT (i.e., number of vehicles per day).

#### **SEA's Conclusion**

Based on its analysis of local transportation effects at the Moyers/Chicago Gateway intermodal facility, SEA concludes that the proposed CN/IC Acquisition would not significantly affect local traffic and roadway systems near the Moyers/Chicago Gateway intermodal facility; therefore, mitigation is not warranted.

## **4.8 PASSENGER RAIL OPERATIONS CAPACITY**

In some areas, passenger trains share track with freight trains. Therefore, SEA evaluated whether Acquisition-related increases in freight train traffic on those shared lines would adversely affect passenger rail operations. To do so, SEA evaluated whether the Applicants' rail line segments could accommodate the projected increases in freight train traffic without significantly affecting intercity passenger rail service (i.e., Amtrak) and commuter rail service. SEA concludes that the proposed Acquisition would not create any significant adverse effect on Amtrak or commuter rail service in any of the seven states where passenger service operators and the Applicants share rail lines; therefore, mitigation is not warranted.

### **4.8.1 Passenger Rail Operations Capacity—Summary of Analysis**

#### **Board Thresholds for Analysis**

As a first step in analyzing passenger rail service, SEA used the Board's thresholds to identify rail line segments warranting environmental analysis. The Board's threshold for passenger rail operations capacity is an increase of one or more freight trains per day resulting from the proposed CN/IC Acquisition where freight operations share the line with passenger rail operations. SEA identified 24 rail line segments with passenger rail service that would experience increased freight train traffic as a result of the proposed CN/IC Acquisition.



**Methods**

SEA reviewed the Applicants' Operating Plan and existing intercity and commuter passenger rail schedules to identify the existing passenger service and rail line segments that would carry both freight and passenger trains after the proposed CN/IC Acquisition. In addition, SEA reviewed the existing traffic capacities of the affected rail line segments and current operating agreements with passenger service operators that share rail line segments with the Applicants.

To identify effects on capacity for a series of rail line segments (i.e., a rail corridor) that exceeded the Board's threshold for environmental analysis, SEA identified the rail line segment with least excess capacity, using a model CN developed to calculate the train running time between track sidings.<sup>32</sup> Afterward, SEA conducted a qualitative review of site-specific factors to evaluate potential effects on passenger rail service for that specific segment. SEA predicted no adverse effect on passenger rail service on the rail corridor if the sum of existing passenger train traffic and the estimated freight train traffic on the worst-case segment would be less than the estimated capacity of that rail line segment.

To identify the impacts on individual rail line segments that exceeded the Board's thresholds for environmental analysis but were not part of a passenger corridor, SEA conducted a similar qualitative review. In its qualitative analysis, SEA considered several factors including track design, locomotive horsepower, train length, and distance between track sidings. Afterward, SEA compared the estimated number of trains on that rail line segment following the Acquisition with the capacity of the most congested rail line segment to determine whether the proposed Acquisition would affect passenger service.

Appendix D, "Transportation Analysis Methods and Results," presents a detailed description of these methods. (See Appendix D, Section D.5.1, "Effects on Passenger Rail Service.")

**Criteria of Significance**

Current operating agreements between passenger service operators and the freight railroads preclude a reduction in passenger rail service. SEA considers the effect on passenger service to be significant if an increase in freight train operations would cause passenger train service to decrease by one or more trains per day. If the proposed CN/IC Acquisition would cause a decrease in

<sup>32</sup> Canadian National Railroad. *Train Performance Calculator*.

passenger service that met this criterion, SEA determined whether mitigation would address the potential adverse effect.

### **Existing Conditions**

Both intercity passenger and commuter rail trains share track with freight trains. The following conditions describe commuter and intercity service operations that share rail line segments with freight trains and meet the Board's threshold of an increase of one or more freight trains per day resulting from the proposed Acquisition.

**Commuter Service.** No commuter rail operations occur on CN rail lines within the United States, and CN does not conduct freight operations on any rail line over which another entity operates commuter service in the United States. In the Chicago, Illinois metropolitan area, the Northern Illinois Railroad Corporation (Metra), the commuter rail arm of Chicago's Regional Transportation Authority, uses some IC rail lines to provide commuter rail service.

Metra provides extensive commuter service over many rail lines in and around Chicago, Illinois. This includes rail lines owned by several different rail carriers and certain rail lines owned by Metra itself. Attachment D-1, "Rail Line Segments with Passenger Service in Descending Order of Change in Freight Activity," of Appendix D, "Transportation Analysis Methods and Results," lists rail line segments with passenger service.

SEA identified three IC-owned rail line segments from Chicago, Illinois to Joliet, Illinois on which Metra provides commuter service. None of these segments met the Board's threshold for environmental analysis for passenger rail operation.

Also in the Chicago, Illinois metropolitan area, IC conducts two minor switching movements on the "Metra Electric Line" between Chicago, Illinois and University Park, Illinois. Because the proposed CN/IC Acquisition would not affect these switching movements, SEA did not include them in its analysis.

**Intercity Service.** Amtrak operates on approximately 1,190 miles of CN or IC rail lines in seven states—Illinois, Indiana, Kentucky, Louisiana, Michigan, Mississippi, and Tennessee. Amtrak operates a national intercity rail passenger service pursuant to the Rail Passenger Service Act of 1970. As required by the Act and subsequent amendments, Amtrak trains receive operating priority over freight trains operated by the Applicants. Amtrak has

operating contracts with the Applicants that address their operations on these rail line segments, and commuter operations on these segments would not change following the proposed Acquisition.

Figure 4-2, "System-wide Rail Line Segments with Passenger Rail Service," shows the locations of Applicant-owned rail line segments used for intercity passenger rail service and commuter rail service. Table 4-19, "Existing Freight and Passenger Traffic on CN and IC Lines that Exceeded Board Thresholds for Analysis," shows the existing levels of freight and passenger traffic on the 24 rail line segments that exceeded the Board's thresholds for environmental analysis. Appendix D, "Transportation Analysis Methods and Results," Attachment D-1, "Rail Line Segments with Passenger Service in Descending Order of Change in Freight Activity," includes a list of rail line segments that the Applicants own and upon which Amtrak provides passenger service.

Two intercity rail service corridors would experience increases in freight rail traffic following the proposed Acquisition: the Chicago-to-Pontiac corridor and the Chicago-to-Carbondale-to-New Orleans corridor.

**Chicago-to-Pontiac.** Amtrak provides intercity passenger service between Chicago, Illinois and Pontiac, Michigan and operates two trains per day in each direction. Amtrak uses primarily Conrail track, except for approximately 28 miles of CN-owned rail line between Pontiac, Michigan and Vinewood Tower, in Wayne County, Michigan.

**TABLE 4-19**  
**EXISTING FREIGHT AND PASSENGER TRAFFIC ON CN AND IC LINES**  
**THAT EXCEEDED BOARD THRESHOLDS FOR ANALYSIS**

Rail Line Segment Description		Rail Line Corridor	Passenger Service Provider	Existing Train Traffic (Trains per Day)		
Between	And			Passenger Trains	Freight Trains	Total Trains
Chicago Yards, IL	Chicago Yards, IL	Chicago-to-Carbondale-to-New Orleans	Amtrak	4.0	19.2	23.2
Homewood, IL	Matteson, IL	Chicago-to-Carbondale-to-New Orleans	Amtrak	4.0	12.9	16.9
Matteson, IL	Kankakee, IL	Chicago-to-Carbondale-to-New Orleans	Amtrak	4.0	12.9	16.9
Kankakee, IL	Otto, IL	Chicago-to-Carbondale-to-New Orleans	Amtrak	4.0	13.4	17.4
Otto, IL	Gilman, IL	Chicago-to-Carbondale-to-New Orleans	Amtrak	4.0	13.4	17.4
Gilman, IL	Champaign, IL	Chicago-to-Carbondale-to-New Orleans	Amtrak	4.0	12.6	16.6
Champaign, IL	Mattoon, IL	Chicago-to-Carbondale-to-New Orleans	Amtrak	4.0	14.2	18.2
Mattoon, IL	Effingham, IL	Chicago-to-Carbondale-to-New Orleans	Amtrak	4.0	13.6	17.6
Effingham, IL	Edgewood, IL	Chicago-to-Carbondale-to-New Orleans	Amtrak	4.0	16.4	20.4
Edgewood, IL	Centralia, IL	Chicago-to-Carbondale-to-New Orleans	Amtrak	4.0	12.2	16.2
Centralia, IL	Renickmine, IL	Chicago-to-Carbondale-to-New Orleans	Amtrak	4.0	14.7	18.7
Renickmine, IL	Du Quoin, IL	Chicago-to-Carbondale-to-New Orleans	Amtrak	4.0	15.6	19.6
Du Quoin, IL	Carbondale, IL	Chicago-to-Carbondale-to-New Orleans	Amtrak	4.0	17.0	21.0
Carbondale, IL	Cairo, IL	Chicago-to-Carbondale-to-New Orleans	Amtrak	2.0	17.0	19.0
Cairo, IL	Fulton, KY	Chicago-to-Carbondale-to-New Orleans	Amtrak	2.0	14.4	16.4
Fulton, KY	Dyersburg, TN	Chicago-to-Carbondale-to-New Orleans	Amtrak	2.0	19.9	21.9

**TABLE 4-19**  
**EXISTING FREIGHT AND PASSENGER TRAFFIC ON CN AND IC LINES**  
**THAT EXCEEDED BOARD THRESHOLDS FOR ANALYSIS**

Rail Line Segment Description		Rail Line Corridor	Passenger Service Provider	Existing Train Traffic (Trains per Day)		
Between	And			Passenger Trains	Freight Trains	Total Trains
Dyersburg, TN	Woodstock, TN	Chicago-to-Carbondale-to-New Orleans	Amtrak	2.0	19.9	21.9
West Junction, TN	Lake Cormorant, MS	Chicago-to-Carbondale-to-New Orleans	Amtrak	2.0	16.6	18.6
Lake Cormorant, MS	Marks, MS	Chicago-to-Carbondale-to-New Orleans	Amtrak	2.0	16.6	18.6
Marks, MS	Swan Lake, MS	Chicago-to-Carbondale-to-New Orleans	Amtrak	2.0	16.6	18.6
Swan Lake, MS	Greenwood, MS	Chicago-to-Carbondale-to-New Orleans	Amtrak	2.0	16.6	18.6
Greenwood, MS	Yazoo City, MS	Chicago-to-Carbondale-to-New Orleans	Amtrak	2.0	16.6	18.6
Yazoo City, MS	Jackson, MS	Chicago-to-Carbondale-to-New Orleans	Amtrak	2.0	16.6	18.6
Milwaukee Jct., MI	Vinewood, MI	Chicago-to-Pontiac	Amtrak	4.0	21.4	25.4

**Chicago-to-Carbondale-to-New Orleans.** Amtrak operates one train per day ("The City of New Orleans") in each direction between Chicago, Illinois and New Orleans, Louisiana. Amtrak also operates one train per day in each direction between Chicago, Illinois and Carbondale, Illinois ("The Illini"). These Amtrak trains use portions of IC's route between Chicago, Illinois and New Orleans, Louisiana—parts of which consist of separate, generally parallel rail lines.

From Chicago's Union Station, each of these Amtrak trains operates over IC's rail line between Chicago, Illinois and Edgewood, Illinois. IC operates freight trains on two rail lines between Edgewood, Illinois and Fulton, Kentucky. The Amtrak trains operate on the freight rail line that runs through Centralia, Illinois and Carbondale, Illinois (westerly), while the parallel freight rail line passes through Saline, Illinois, with a branch line

reaching Paducah, Kentucky (easterly). The "City of New Orleans" train uses IC's westerly rail line between Edgewood, Illinois and Fulton, Kentucky; and "The Illini" train also uses this rail line as far south as Carbondale, Illinois. IC freight trains operating in the Chicago-to-New Orleans rail line corridor use both the westerly rail line that passes through Centralia, Illinois between Edgewood, Illinois and Fulton, Kentucky and the parallel easterly rail line segment. Between Fulton, Kentucky and Memphis, Tennessee, Amtrak operates over IC's single-track mainline.

Between Memphis, Tennessee and Jackson, Mississippi, IC again operates two rail lines: the westerly rail line passes through Greenwood, Mississippi; and the easterly rail line passes through Winona, Mississippi. Amtrak uses the westerly segment, as does IC for most freight operations.<sup>33</sup> From Jackson, Mississippi to New Orleans, Louisiana, Amtrak uses IC's single-track mainline.

### Analysis Results

**Intercity Service.** SEA determined that 23 of the 24 rail line segments that met the Board's threshold for analysis are part of the Chicago, Illinois-to-New Orleans, Louisiana rail line corridor. For the Chicago-to-New Orleans rail line corridor, SEA estimated the rail line segment capacity using a model CN developed to calculate the train running time between track sidings.<sup>34</sup> The other rail line segment occurs in Wayne County, Michigan between Vinewood Tower and Milwaukee Junction.

Table 4-20, "Post-Acquisition Freight Traffic and Estimated Capacity on CN and IC Lines that Exceeded the Board's Thresholds for Analysis," shows the Applicants' estimate for post-Acquisition freight traffic for the 24 rail line segments that exceeded the Board's threshold for the analysis of effects on passenger rail operations.

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<sup>33</sup> Although Amtrak conducts passenger operations over the westerly line segments in those areas where IC maintains two routes, Amtrak can use IC's easterly freight-only lines (between Edgewood, Illinois and Fulton, Kentucky and between Jackson, Mississippi and Memphis, Tennessee) in an emergency, if the westerly route is blocked.

<sup>34</sup> Canadian National Railroad. *Train Performance Calculator*.

**TABLE 4-20**  
**POST-ACQUISITION FREIGHT TRAFFIC AND ESTIMATED**  
**CAPACITY ON CN AND IC LINES THAT**  
**EXCEEDED THE BOARD'S THRESHOLDS FOR ANALYSIS**

Rail Line Segment Description		Rail Line Corridor	Passenger Service Provider	Post-Acquisition Train Traffic (Trains per Day)			
Between	And			Passenger Trains	Freight Trains	Total Trains	Change in Freight Train Traffic
Chicago Yards, IL	Chicago Yards, IL	Chicago-to-Carbondale-to-New Orleans	Amtrak	4.0	26.8	30.8	7.6
Homewood, IL	Matteson, IL	Chicago-to-Carbondale-to-New Orleans	Amtrak	4.0	18.0	22.0	5.1
Matteson, IL	Kankakee, IL	Chicago-to-Carbondale-to-New Orleans	Amtrak	4.0	20.0	24.0	7.1
Kankakee, IL	Otto, IL	Chicago-to-Carbondale-to-New Orleans	Amtrak	4.0	20.6	24.6	7.2
Otto, IL	Gilman, IL	Chicago-to-Carbondale-to-New Orleans	Amtrak	4.0	20.6	24.6	7.2
Gilman, IL	Champaign, IL	Chicago-to-Carbondale-to-New Orleans	Amtrak	4.0	18.3	22.3	5.7
Champaign, IL	Mattoon, IL	Chicago-to-Carbondale-to-New Orleans	Amtrak	4.0	19.6	23.6	5.4
Mattoon, IL	Edingham, IL	Chicago-to-Carbondale-to-New Orleans	Amtrak	4.0	19.0	23.0	5.4
Edingham, IL	Edgewood, IL	Chicago-to-Carbondale-to-New Orleans	Amtrak	4.0	21.9	25.9	5.5
Edgewood, IL	Centralia, IL	Chicago-to-Carbondale-to-New Orleans	Amtrak	4.0	15.9	19.9	3.7
Centralia, IL	Reinokmine, IL	Chicago-to-Carbondale-to-New Orleans	Amtrak	4.0	18.4	22.4	3.7
Reinokmine, IL	Du Quoin, IL	Chicago-to-Carbondale-to-New Orleans	Amtrak	4.0	19.3	23.3	3.7

**TABLE 4-20**  
**POST-ACQUISITION FREIGHT TRAFFIC AND ESTIMATED**  
**CAPACITY ON CN AND IC LINES THAT**  
**EXCEEDED THE BOARD'S THRESHOLDS FOR ANALYSIS**

Rail Line Segment Description		Rail Line Corridor	Passenger Service Provider	Post-Acquisition Train Traffic (Trains per Day)			
Between	And			Passenger Trains	Freight Trains	Total Trains	Change in Freight Train Traffic
De Quois, IL	Carbondale, IL	Chicago-to-Carbondale-to-New Orleans	Amtrak	4.0	20.7	24.7	3.7
Carbondale, IL	Cairo, IL	Chicago-to-Carbondale-to-New Orleans	Amtrak	2.0	20.7	22.7	3.7
Cairo, IL	Fulton, KY	Chicago-to-Carbondale-to-New Orleans	Amtrak	2.0	18.2	20.2	3.8
Fulton, KY	Dyersburg, TN	Chicago-to-Carbondale-to-New Orleans	Amtrak	2.0	25.3	27.3	5.4
Dyersburg, TN	Woodstock, TN	Chicago-to-Carbondale-to-New Orleans	Amtrak	2.0	25.3	27.3	5.4
West Junction, TN	Lake Cormorant, MS	Chicago-to-Carbondale-to-New Orleans	Amtrak	2.0	20.3	22.3	3.7
Lake Cormorant, MS	Marks, MS	Chicago-to-Carbondale-to-New Orleans	Amtrak	2.0	20.3	22.3	3.7
Marks, MS	Swan Lake, MS	Chicago-to-Carbondale-to-New Orleans	Amtrak	2.0	20.3	22.3	3.7
Swan Lake, MS	Greenwood, MS	Chicago-to-Carbondale-to-New Orleans	Amtrak	2.0	20.3	22.3	3.7
Greenwood, MS	Yazoo City, MS	Chicago-to-Carbondale-to-New Orleans	Amtrak	2.0	20.3	22.3	3.7
Yazoo City, MS	Jackson, MS	Chicago-to-Carbondale-to-New Orleans	Amtrak	2.0	20.3	22.3	3.7
Milwaukee Jct., MI	Vinewood, MI	Chicago-to-Pontiac	Amtrak	4.0	27.3	31.3	5.9



**Chicago-to-Carbondale-to-New Orleans** SEA estimated that freight train traffic would decrease slightly (i.e., 0.4 train per day) between Chicago, Illinois and Harvey, Illinois, a distance of approximately 21 miles. From Harvey, Illinois to Woodstock, Tennessee, a distance of approximately 495 miles, SEA estimated that traffic would increase on 17 rail line segments by approximately 3.7 to 7.6 freight trains per day. From West Junction, Tennessee to Jackson, Mississippi, SEA estimated that freight train traffic would increase by approximately 3.7 trains per day. This portion of the rail line corridor covers six rail line segments and approximately 214 miles. Finally, SEA estimated that freight train traffic would not change on the portion of the corridor between Jackson, Mississippi and New Orleans, Louisiana, a distance of approximately 180 miles.

SEA also analyzed the capacity of the 23 rail line segments on the Chicago-to-Carbondale-to-New Orleans rail line corridor that would experience an increase in freight train traffic. SEA determined that the rail line segment between Carbondale, Illinois and Cairo, Illinois would experience the longest train running times between the track sidings because of the following conditions:

- Greater distances between rail line sidings.
- Steeper grades on this rail line segment.
- Tighter curves on this rail line segment.

Because of these conditions, SEA determined that any bottlenecks on the Chicago-to-Carbondale-to-New Orleans rail corridor would occur on the Carbondale-to-Cairo rail line segment. It estimated that this line segment has a theoretical capacity of 43 trains per day. SEA then applied an industry-accepted safety factor of 60 percent to account for potential dispatching or train-handling problems. Using this safety factor, SEA conservatively estimated that the rail line segment had the capacity to accommodate 26 trains per day. Because the post-Acquisition estimate of train traffic on this rail line segment is 22.7 trains per day, SEA concluded that sufficient capacity exists on this rail line segment to accommodate Acquisition-related changes in freight traffic without affecting passenger rail service.

SEA concluded that the proposed CN/AC Acquisition would not affect Amtrak intercity service on the Chicago-to-Carbondale-to-New Orleans rail line corridor for the following reasons:

- SEA's analysis was based on conservative assumptions for train weight and locomotive horsepower, which produced conservative estimates of rail line capacity.
- The Applicants operate a second north-south rail line between Edgewood, Illinois and Fulton, Kentucky. Freight trains can use this rail line corridor to alleviate possible bottlenecks on the parallel rail corridor between Carbondale, Illinois and Cairo, Illinois.
- In the event of congestion, Amtrak trains would continue to receive operating priority over the Applicants' freight trains following the proposed CN/IC Acquisition.

***Milwaukee Junction-to-Vinewood Tower.*** SEA analyzed the ability of the rail line segment between Milwaukee Junction, Michigan and Vinewood Tower, Michigan to accommodate the estimated increase of 1.9 freight trains per day. SEA determined that this rail line segment is a double-track segment that could easily handle the expected increase in freight train traffic. Based on its analysis, SEA concluded that the proposed CN/IC Acquisition would not affect Amtrak intercity service on the Chicago-to-Pontiac rail line corridor.

#### **SEA's Conclusions**

SEA concludes that the proposed Acquisition would not affect Amtrak or commuter rail service in any of the seven states where passenger service operators and the Applicants share rail lines; therefore, mitigation is not warranted. Furthermore, following the proposed CN/IC Acquisition, SEA notes that the Applicants would continue to honor their existing agreements with Amtrak, which would also prevent adverse effects on passenger rail service.

## **4.9 NAVIGATION**

SEA evaluated potential effects of the proposed CN/IC Acquisition on navigable waterways and ports to determine whether:

1. Increases in freight train traffic on rail line segments with movable bridges crossing navigable waterways would adversely affect ships using those waterways.
2. Ports would experience changes in the volume of freight handled.

To conduct its evaluation of potential effects on movable bridges, SEA identified all movable-span bridges on all rail line segments of the proposed CN/IC Acquisition. SEA determined that the Applicants move freight on four of the six movable-span bridges in the proposed CN/IC

system. Coast Guard regulations specify that waterborne traffic has the right-of-way over train traffic at movable bridges, except when the train traffic is in a block containing the movable bridge.<sup>35</sup> SEA concludes that because U.S. Coast Guard regulations control how movable bridges operate over navigable waterways in the United States, the proposed CN/IC Acquisition would have no effect on navigation.

To conduct its evaluation of potential effects on ports, SEA identified which ports the Applicants currently serve and then reviewed the Applicants' estimates of freight volume changes on the integrated CN/IC rail system to determine if the proposed CN/IC Acquisition would cause any significant increases or decreases in the volume of freight handled by ports. SEA determined that the proposed CN/IC Acquisition would reduce some freight shipments currently handled by transferring them from U.S. eastern seaboard ports to Canadian ports. This diversion would account for approximately 6 percent of the total increase in freight tonnage on the Applicants' rail system following the proposed CN/IC Acquisition. SEA concludes this effect would be insignificant and is not recommending mitigation.

Appendix D, "Transportation Analysis Methods and Results," contains details of SEA's environmental review of port and navigation issues.

#### **4.10 ENERGY**

As required in the Board's regulations at 49 CFR 1105.7(e)(4), SEA analyzed the following energy-related effects of the proposed CN/IC Acquisition:

1. The degree to which the proposed Acquisition would result in an increase or decrease in overall energy (fuel) consumption.
2. Changes in fuel consumption and transportation of energy resources and recyclable commodities.

To determine overall changes in energy efficiency, SEA calculated system-wide changes in diesel fuel consumption resulting from the following: (1) diversions of freight from truck-to-rail transport and rail-to-truck transport, (2) increased levels of activity at intermodal facilities, and (3) longer delays of vehicles at highway/rail at-grade crossings that would result from increased numbers and length of freight trains. SEA's analysis showed that the proposed CN/IC Acquisition would have a positive effect on overall energy consumption because overall fuel consumption would decrease by approximately 4.22 million gallons per year.

The Board's regulations at 49 CFR 1105.7(e)(4) also require an analysis of the effect on the transportation of energy resources such as coal or oil and the effect on the transportation of recyclable commodities such as aluminum, plastic, and paper. SEA evaluated the potential effects of the proposed CN/IC Acquisition on the transportation of energy resources and determined that coal is the dominant material the Applicants transport. SEA estimates that the

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<sup>35</sup> 33 CFR Part 117.

transportation of energy resources, such as coal, would increase slightly (i.e., approximately 0.2 percent) as a result of the proposed CN/IC Acquisition. SEA also estimates that the transportation of recyclable commodities would increase by approximately 6 percent as a result of the proposed CN/IC Acquisition. SEA determined that these changes would not adversely affect the transportation of energy resources and recyclable commodities; therefore, mitigation is not warranted.

Appendix E, "Energy Analysis Methods and Results," presents a detailed description of SEA's analysis of energy effects related to the proposed CN/IC Acquisition.

## **4.11 AIR QUALITY**

SEA evaluated potential effects on air quality for the following:

1. System-wide, or overall Acquisition-related changes in air quality.
2. County-wide, or local changes in air quality.

In its evaluation, SEA considered whether increases in rail activity would increase emissions for carbon monoxide (CO), nitrogen oxides (NO<sub>x</sub>), particulate matter less than 10 microns in diameter (PM<sub>10</sub>), and volatile organic compounds (VOCs) to a significant level. SEA's analysis focused on these pollutant emissions because they result from diesel locomotives, trucks, and automobiles, which are the major sources of air pollutant emissions that the proposed CN/IC Acquisition could affect. SEA concludes that increased rail activity resulting from the proposed CN/IC Acquisition would have no significant adverse effect on system-wide or county level air quality. Therefore, mitigation is not warranted for either.

Section 4.11.2 presents the methods and results of SEA's system-wide analysis, including the following: (1) a description of existing conditions, (2) an estimate and evaluation of the changes in emissions resulting from the proposed CN/IC Acquisition, and (3) SEA's recommendation concerning the need for mitigation measures. Section 4.11.3 similarly presents the methods and results of SEA's county-wide analysis of air quality.

### **4.11.1 Background**

SEA assessed the effects of the Applicants' proposed changes in rail operations and related changes in freight truck operations on air quality. Trains and trucks emit pollutants that include the following: NO<sub>x</sub>, SO<sub>2</sub>, VOCs (which generally are also hydrocarbons (HC)), CO, PM<sub>10</sub>, and lead. U.S. Environmental Protection Agency (EPA) has developed National Ambient Air Quality Standards (NAAQS) for each of these pollutants, except for VOCs, which contribute to the formation of ozone (O<sub>3</sub>). EPA has established a NAAQS for ozone. These standards identify the allowed concentrations of these criteria pollutants to protect public health and welfare. (See Table 4-21, "NAAQS for Criteria Pollutants.")

**TABLE 4-21**  
**NAAQS FOR CRITERIA POLLUTANTS<sup>a</sup>**

Pollutant	Averaging Period	NAAQS	
		ppm <sup>a</sup>	µg/m <sup>3b</sup>
Particulate Matter Less Than 10 Microns in Diameter (PM <sub>10</sub> )	Annual	N/A	50
	24 hour	N/A	150
Sulfur Dioxide (SO <sub>2</sub> )	Annual	0.030	80
	24 hour	0.14 <sup>c</sup>	365 <sup>c</sup>
	3 hour	0.5	1,300
Nitrogen Dioxide (NO <sub>2</sub> )	Annual	0.053	100
Ozone (O <sub>3</sub> )	1 hour	0.12 <sup>c</sup>	235 <sup>c</sup>
	8 hour	0.08	157
Carbon Monoxide (CO)	8 hour	9 <sup>c</sup>	10,000 <sup>c</sup>
	1 hour	35 <sup>c</sup>	40,000 <sup>c</sup>
Lead	Calendar Quarter	N/A	1.5

<sup>a</sup> Concentration of criteria pollutant in ambient air in parts per million.

<sup>b</sup> Measured in micrograms per cubic meter.

<sup>c</sup> Measured concentration is not to exceed NAAQS more than once per year.

N/A Not applicable

Source: 40 CFR Part 50 (National Primary and Secondary Ambient Air Quality Standards).

EPA classifies each county as being in "attainment" or "nonattainment" with respect to each criteria pollutant. EPA defines an attainment area as an area that has air quality as good as, or better than, the NAAQS for all of the criteria pollutants. In a nonattainment area, the air quality does not meet one or more of the NAAQS. EPA also defines a "maintenance area" as a third category to assess air quality. A maintenance area is an area that EPA formerly classified as a nonattainment area; however, because of air quality improvements, EPA has reclassified the area as an attainment area. EPA bases its attainment status designations on the results of ongoing air monitoring studies and the number of exceedances of NAAQS for specific criteria pollutants.

For some criteria pollutants (i.e., ozone, CO, and PM<sub>10</sub>), EPA has further classified nonattainment areas according to the degree of nonattainment, depending on how much the

monitored concentrations exceeded their respective NAAQS. EPA has defined these nonattainment area classifications in terms of the quantitative monitoring results. Table 4-22, "Nonattainment Area Classifications for Ozone, CO, and PM<sub>10</sub>," identifies and defines these nonattainment area classifications for these three criteria pollutants.

**TABLE 4-22**  
**NONATTAINMENT AREA CLASSIFICATIONS FOR**  
**OZONE, CO, AND PM<sub>10</sub>**

Nonattainment Area Classification	Monitored Concentration* (ppm)
<b>Ozone</b>	
Marginal	0.121 up to (but not including) 0.138
Moderate	0.138 up to (but not including) 0.160
Serious	0.160 up to (but not including) 0.180
Severe-15	0.180 up to (but not including) 0.190
Severe-17	0.190 up to (but not including) 0.280
Extreme	0.280 and above
<b>CO</b>	
Moderate-1	9.1 - 12.7
Moderate-2	12.8 - 16.4
Serious	16.5 and above
<b>PM<sub>10</sub></b>	
Moderate	50 (µg/m <sup>3</sup> ) <sup>b</sup> (annual averaging period) or 150 (µg/m <sup>3</sup> ) <sup>b</sup> (24-hour averaging period) <sup>c</sup>
Serious	

\* Concentration of criteria pollutant in ambient air in parts per million.

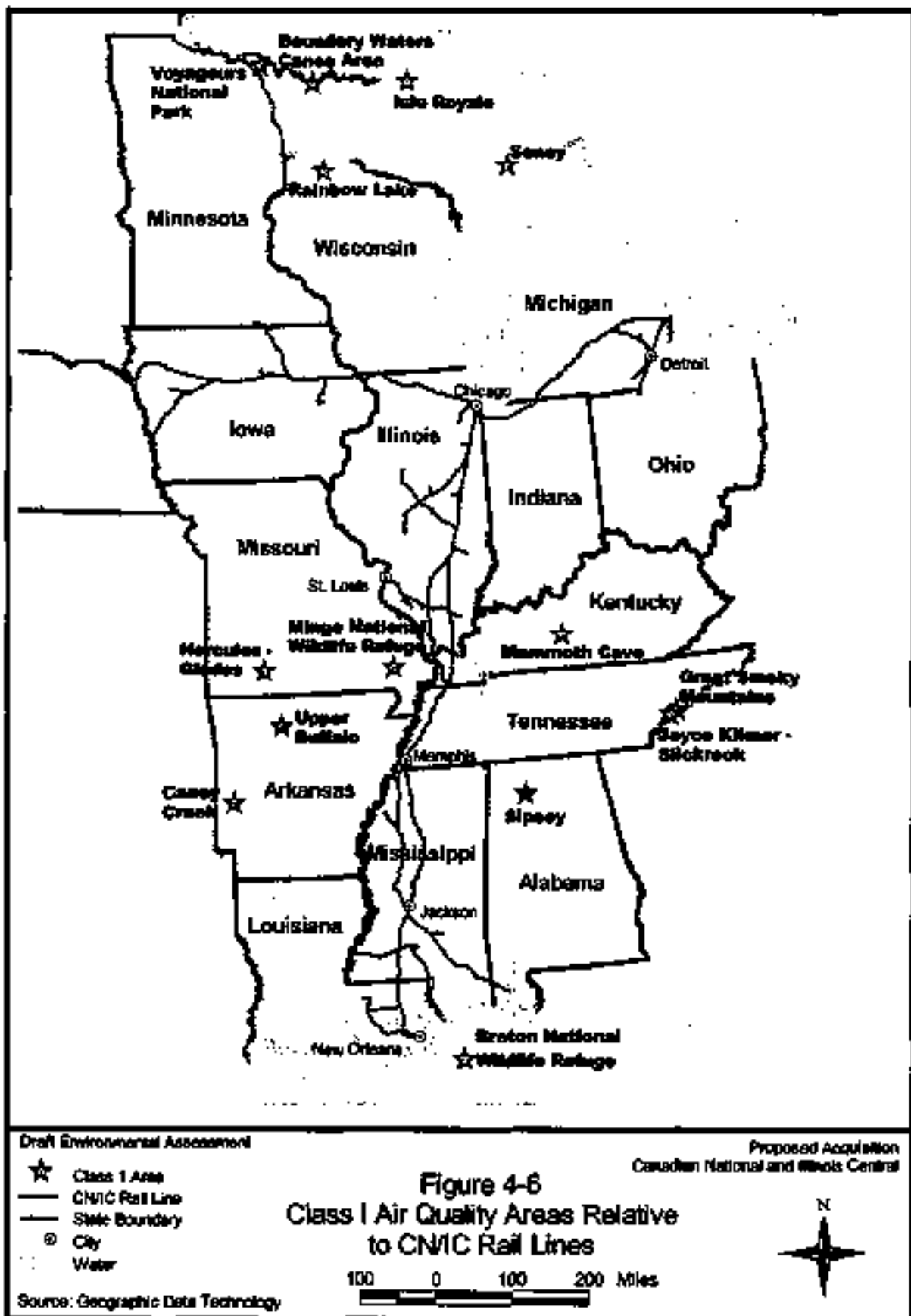
<sup>b</sup> Measured in micrograms per cubic meter.

<sup>c</sup> EPA reclassified initial PM<sub>10</sub> nonattainment areas from moderate-to-serious if the monitoring data did not meet the NAAQS by December 31, 1994.

Source: 40 CFR Part 81 (Air Quality Designations and Classifications, Final Rule).

The 1977 Clean Air Act Amendments (CAAA) designated certain areas (i.e., national parks and wilderness areas) as Prevention of Significant Deterioration (PSD) Class I areas. EPA established more stringent standards to protect Class I areas from air quality deterioration for several of the pollutants under consideration in SEA's analysis of the proposed CN/IC Acquisition. These pollutants include  $PM_{10}$ ,  $SO_2$ , and  $NO_x$ . Figure 4-6, "Class I Air Quality Areas Relative to CN/IC Rail Lines," shows the following rail line segments that are closest to Class I areas:

- Segment number 1270 (northeast Minnesota) is approximately 5 miles from Voyageurs National Park, approximately 40 miles from Boundary Waters Canoe Area, and approximately 50 miles from Rainbow Lake. In their Operating Plan, the Applicants projected a 1 percent increase in gross ton-miles (GTM) and a decrease in train traffic of one train per day on this rail line segment. SEA concluded that emissions resulting from the Applicants' rail activities on this rail line segment would not adversely affect these Class I areas because of the relatively small increase in GTM.
- Segment number 380 (southern Illinois) is approximately 50 miles from Mingo National Wildlife Refuge. In their Operating Plan, the Applicants projected a 35 percent increase in train traffic of 3.7 trains per day on this rail line segment. SEA concluded that emissions resulting from the Applicants' rail activities on this rail line segment would not adversely affect this Class I area because of the distance between the rail activities and this Class I area.
- Segment number 660, which passes through New Orleans, Louisiana is approximately 60 miles from Breton National Wildlife Refuge. In their Operating Plan, the Applicants projected an 8 percent increase in GTM and no train traffic increase on this rail line segment. SEA concluded that emissions resulting from the Applicants' rail activities would not adversely affect this Class I area because rail activities, according to projections, will not increase following approval of the Acquisition.





#### 4.11.2 System-wide Analysis

<b>Summary of Issue</b>	SEA evaluated whether changes in rail activities, truck-to-rail diversions, and potential traffic delays at highway/rail at-grade crossings would affect air quality on a system-wide level.
<b>Board Thresholds for Analysis</b>	SEA evaluated all changes in railroad activities for the system-wide analysis.
<b>Criteria of Significance</b>	For this issue area, SEA did not develop criteria of significance because no change in emissions would result from the proposed CN/IC Acquisition.
<b>Methods</b>	<p>SEA conducted a system-wide analysis to identify the overall net effect that the proposed CN/IC Acquisition would have on emissions. SEA performed this system-wide analysis for the following emissions sources:</p> <ul style="list-style-type: none"><li>• Increases in freight train activity on the integrated CN/IC rail system. This analysis included estimating additional quantities of freight shipped by rail after the proposed CN/IC Acquisition (expressed in terms of GTM) as a result of the diversion of freight from truck to rail and from rail to truck. This analysis did not include emissions resulting from the diversion of freight from other railroads' rail line segments to the Applicants' rail line segments. SEA assumed that the decrease in emissions from other rail lines would offset an increase in the Applicants' emissions, resulting from the diversion of freight from the other rail lines. Similarly, SEA did not include changes in rail car activity at rail yards in the system-wide analysis. SEA assumed that the decrease in emissions from other rail yards would offset the projected increase in emissions from the Applicants' rail yards.</li><li>• Decreases in OTR truck activity (i.e., truck-to-rail diversions). Rail transport of freight is more efficient than truck transport; therefore, rail transport of freight consumes less fuel. SEA's analysis incorporated the system-wide decrease in truck mileage because of the diversion of freight from truck to rail.</li><li>• Activity changes at intermodal facilities. This analysis incorporated the portion of intermodal freight diverted from truck to rail, which would account for approximately</li></ul>

42.3 percent of the total intermodal freight diversion. The total intermodal diversion of freight would include the following: (1) rail-to-rail diversions, (2) truck-to-rail diversions, and (3) port-to-rail diversions. SEA assumed the rail-to-rail and port-to-rail diversions would not result in a net change in railroad emissions.

- Idling vehicles delayed at highway/rail at-grade crossings with an ADT volume of 5,000 or greater. SEA estimated emissions from these vehicles for rail line segments that would meet or exceed the Board's thresholds for environmental analysis. SEA did not estimate the reduction in emissions from idling vehicles at highway/rail at-grade crossings on other rail systems (i.e., not owned by CN/IC). These emissions would approximately offset increases at CN/IC highway/rail at-grade crossings.

SEA calculated and summed the changes in emissions from each of these sources to obtain annual system-wide net emissions estimates for each criteria pollutant. Appendix F, "Air Quality Analysis Methods and Results," contains a detailed description of the methods that SEA used for the system-wide air quality analysis.

SEA also considered whether dispersion modeling was appropriate for determining if an emissions change might result in localized exceedances of the NAAQS or other negative localized health impacts. The dispersion modeling analysis simulates the dispersion of emissions into the atmosphere and predicts a concentration for comparison with the NAAQS or other health standards.

SEA reviewed the results of dispersion modeling it performed previously for the Conrail Acquisition (which included much larger changes in rail traffic than the proposed CN/IC transaction<sup>36</sup>) to determine whether dispersion modeling would be warranted for the Applicants' proposed CN/IC Acquisition to determine localized air quality effects. The Conrail Acquisition Final Environmental Impact Statement document discusses dispersion modeling analyses that SEA performed to identify potential adverse air quality impacts for the following:

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<sup>36</sup> Surface Transportation Board, Section of Environmental Analysis. *Final Environmental Impact Statement, CSX Corporation and CSX Transportation, Inc., Norfolk Southern Corporation and Norfolk Southern Railway Company—Control and Operating Leases/Agreements—Conrail Inc. and Consolidated Rail Corporation*, STB Finance Docket No. 33388, Volume 6B, Appendix I, Section 1.2.2, May 1998.

- Criteria pollutant emissions resulting from motor vehicle delays at highway/rail at-grade crossings.
- Criteria pollutant emissions from idling locomotives on rail line segments.
- Criteria and toxic air pollutant emissions from moving locomotives on rail line segments.

In this dispersion analysis, SEA identified no exceedances of the NAAQS or other health criteria; therefore, SEA concluded the Conrail Acquisition would not result in adverse localized air quality impacts.

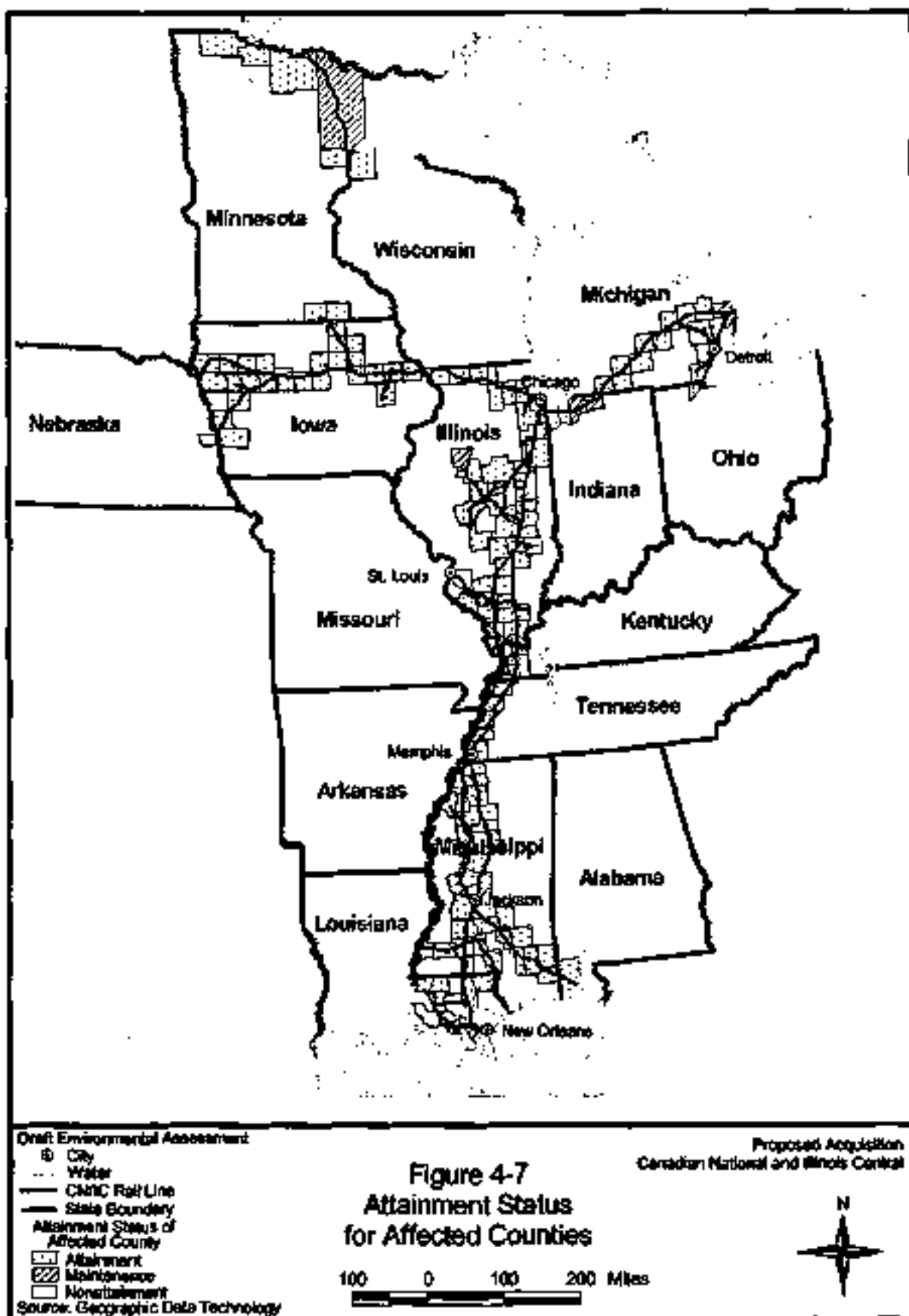
To determine whether dispersion modeling was warranted for this Draft EA, SEA compared the values that it used for the Conrail Acquisition against the following proposed CN/IC Acquisition values: (1) vehicular traffic volumes, (2) total vehicle delay times, and (3) the Applicants' Operating Plan data (i.e., the number of locomotives per train, post-Acquisition trains per day). SEA determined that, in the proposed CN/IC case, the Applicants' traffic and Operating Plan values were either less than or equal to the values that SEA used in the Conrail Acquisition and concluded, therefore, that dispersion modeling for the proposed CN/IC Acquisition would predict lower pollutant concentrations than for the Conrail Acquisition. Based on these facts, SEA did not expect adverse localized air quality impacts to result from the proposed CN/IC Acquisition and concluded that separate dispersion modeling was not necessary to assess the localized air quality impacts resulting from the proposed CN/IC Acquisition.<sup>37</sup>

#### Existing Conditions

Figure 4-7, "Attainment Status for Affected Counties," shows the current attainment status for all counties affected by the proposed CN/IC Acquisition.

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<sup>37</sup> SEA considered a similar "comparison" approach for the system-wide and county-wide analysis insufficient. For those analyses, SEA considered fuel usage, efficiencies, CN emissions factors, and other data specific to the CN/IC Acquisition.



## **Analysis Results**

In the system-wide emissions estimates, SEA included all Acquisition-related activities. This analysis included activities that would meet or exceed the Board's thresholds for environmental analysis, as well as those activities that would not exceed these thresholds. SEA summed the system-wide emissions estimates from Acquisition-related changes in activity on rail line segments, truck-to-rail diversions, changes in intermodal facilities, and delays at highway/rail at-grade crossings. Table 4-23, "Summary of System-wide Emissions Estimates," presents the summary of system-wide emissions changes. SEA's analysis shows the proposed CN/IC Acquisition would result in an overall net decrease in VOCs, CO, NO<sub>x</sub>, and PM<sub>10</sub> emissions; a minimal increase in SO<sub>2</sub> emissions; and a negligible change in lead emissions.

SEA estimated the Acquisition-related changes in emissions from locomotives on the Applicants' rail line segments using emissions factors that were representative of the Applicants' 1998 locomotive operating fleet. SEA did not apply emissions factors that take into account EPA's Final Rule for locomotive emissions standards because the Applicants have not yet modified the current fleet of locomotives to emit lower levels of NO<sub>x</sub>. Because the standards for NO<sub>x</sub> in the Final Rule will take effect in the year 2000, the Applicants' NO<sub>x</sub> emissions would be substantially lower than those listed in Table 4-23, "Summary of System-wide Emissions Estimates," after the Applicants come into compliance with these standards. (See Chapter 6, "Environmental Consequences—Cumulative Effects," for a complete discussion of EPA's locomotive emissions rule.)

SEA also compared the net system-wide emissions changes that would result from the proposed Acquisition with the sum of existing emissions inventories for all 156 counties affected by the proposed CN/IC Acquisition. Table 4-23, "Summary of System-wide Emissions Estimates," provides a comparison of the total existing emissions inventory with the total change in emissions for all counties affected by the proposed CN/IC Acquisition. SEA's analysis showed that the only criteria pollutant that would increase in emissions as a result of the proposed CN/IC Acquisition would be SO<sub>2</sub>. Table 4-23 shows that the proposed CN/IC Acquisition would result in 38.5 additional tons of SO<sub>2</sub> per year, which is insignificant when compared with more than 1.8 million tons of SO<sub>2</sub> per year currently emitted from all emissions sources in the counties affected by the proposed CN/IC Acquisition.

**TABLE 4-23**  
**SUMMARY OF SYSTEM-WIDE EMISSIONS ESTIMATES**

Emissions Source	Estimated Emissions Changes in Tons/Year				
	VOCs	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>
Rail Line Segments Activity <sup>a</sup>	21.3	56.7	576.4	53.4	14.2
Truck-to-rail Diversions (OTTR) <sup>b</sup>	-57.4	-289.6	-660.4	-17.1	-37.9
Rail Car Activity at Rail Yards <sup>c</sup>	0	0	0	0	0
Intermodal Facilities Activity <sup>d</sup>	3.4	13.6	30.8	2.2	3.2
Idling Vehicles Delayed at Highway/Rail At-grade Crossings <sup>e</sup>	0.7	6.4	0.2	0.04	0.003
<b>Total Change</b>	<b>-32.0</b>	<b>-212.8</b>	<b>-53.0</b>	<b>38.5</b>	<b>-20.6</b>
<b>Total Emissions Inventory<sup>f</sup></b>	<b>1,989,156</b>	<b>7,565,872</b>	<b>2,119,513</b>	<b>1,837,199</b>	<b>2,963,216</b>

<sup>a</sup> SEA based this analysis on additional post-Acquisition rail traffic resulting from truck to rail diversions. SEA assumed 1:1 ratio of rail-to-rail diversions (i.e., excluded decreased ton-miles on other rail roads and the subsequent ton-mile increases on CN/IC integrated rail line segments).

<sup>b</sup> SEA based this analysis on the Applicant's traffic study of truck-miles saved.

<sup>c</sup> SEA does not anticipate system-wide emissions changes because decreases in rail car activity at other railroads' rail yards would offset rail car activity increases at CN/IC rail yards.

<sup>d</sup> SEA based this analysis on the portion of intermodal freight diverted from truck to rail (42.3 percent of the total intermodal freight diversion).

<sup>e</sup> Highway/rail at-grade crossings with an ADT volume of 5,000 or greater on rail line segments that would meet or exceed the Board's thresholds for environmental analysis.

<sup>f</sup> SEA summed all existing emissions for all counties affected by the proposed CN/IC Acquisition, based on the Emissions Trends Viewer, compact disk, 1985-1993, Version 1.0, September 1996, EPA, Office of Air Quality Planning and Standards, Research Triangle Park, NC. These estimates are based on 1995 data.

### SEA's Conclusion

Estimated emissions for CO, NO<sub>x</sub>, PM<sub>10</sub>, and VOCs would decrease as a result of the proposed CN/IC Acquisition. SEA determined that the increase in SO<sub>2</sub> emissions resulting from the proposed CN/IC Acquisition would be insignificant, considering the relatively small increase in emissions and the large geographic area in which these emissions would occur. Therefore, SEA concludes that no significant adverse effect would occur on system-wide air quality and that mitigation to reduce system-wide SO<sub>2</sub> emissions is not necessary.

### 4.11.3 County-wide Analysis

#### Summary of Issue

SEA also evaluated whether increases in rail activity, truck-to-rail diversions, and increases in potential traffic delay would affect air quality on a county level to identify potential local air quality impacts. SEA used the county level to represent local air quality because EPA evaluates air quality on a county level.

#### Board Thresholds for Analysis

SEA estimated emissions for all counties in which projected increases in rail or related truck activities would exceed the Board's thresholds for environmental analysis of air quality in 49 CFR 1105.7. The Board thresholds address projected specific increases in operations on individual rail line segments (i.e., increases in train traffic or freight carried by line-haul locomotives), as well as at rail yards (i.e., increases in rail car switching or block-swapping activities) and intermodal facilities (i.e., increases in OTR truck traffic associated with intermodal facilities). SEA identified 11 rail line segments, five rail yards, and one intermodal facility where Acquisition-related changes in rail activities exceed the Board thresholds for air quality analysis. Table 4-24, "Board's Thresholds for Environmental Analysis of Air Quality," explains the levels of activity that require SEA to perform an air quality analysis. SEA identified 11 rail line segments, five rail yards, and one intermodal facility where changes in rail line activities would exceed the Board's thresholds for environmental analysis.

#### Methods

If Acquisition-related rail or related truck activities in a specific county would exceed the Board's thresholds for environmental analysis, SEA estimated the changes in emissions for these activities for that county. SEA then compared the estimated changes in emissions for each of these individual counties with a set of screening criteria that EPA has established to determine whether emissions changes at stationary sources (i.e., power plants or industrial facilities) require a Federal or a state permit for construction or operation. This approach provides conservative screening for potential air quality impacts because stationary sources do not benefit from the dispersion effects that mobile sources experience. If the projected county-wide emissions for each pollutant would be less than the screening criteria, SEA considered the impacts to air quality insignificant for that county. SEA's screening criteria are described in Appendix F, "Air Quality Analysis Methods and Results."

**TABLE 4-24**  
**BOARD'S THRESHOLDS FOR ENVIRONMENTAL ANALYSIS OF AIR QUALITY**

Activity	Threshold
<b>Attainment Areas [49 CFR 1145.7(e)(5)(i)]<sup>a</sup></b>	
Rail line segment	Increase of eight trains/day or 100% increase in freight activity, as measured in GTM annually
Rail yard	100% increase in freight activity, as measured in carload activity <sup>b</sup>
Intermodal facility	Increase of 50 trucks/day or increase in truck traffic greater than 10% of ADT for any affected roadway
<b>Nonattainment Areas and Class I Areas [49 CFR 1145.7(e)(5)(ii)]</b>	
Rail line segment	Increase of three trains/day or 50% increase in freight activity, as measured in GTM annually
Rail yard	20% increase in freight activity as measured in carload activity <sup>b</sup>
Intermodal facility	Increase of 50 trucks/day or increase in truck traffic greater than 10% of ADT for any affected roadway

<sup>a</sup> The Applicants applied attainment area thresholds to maintenance areas (i.e., EPA redesignated these areas, which were previously not in compliance with the NAAQS, to attainment status because of air quality improvements).

<sup>b</sup> The Applicants defined carload activity in terms of rail car switching and block swapping for determining threshold increases at rail yards.

For each county where the estimated changes in the Applicants' projected emissions would exceed its screening criteria, SEA conducted a more detailed analysis. This detailed analysis summed all county-wide emissions increases and decreases that would result from the proposed CN/IC Acquisition. SEA also identified the existing emissions inventory for the county from an EPA database that tracks emissions trends.

### **Criteria of Significance**

SEA compared the estimated county-wide changes in emissions resulting from the proposed CN/IC Acquisition to the total emissions inventory for the county. SEA assessed the significance of the estimated changes in emissions on air quality in the county based on the criteria it developed in its review of the recent Conrail transaction. These criteria are shown in Table 4-25, "Levels of Potential Significance." Appendix F, "Air Quality Analysis Methods and Results," presents a detailed rationale for these levels of potential significance.



**TABLE 4-25**  
**LEVELS OF POTENTIAL SIGNIFICANCE**

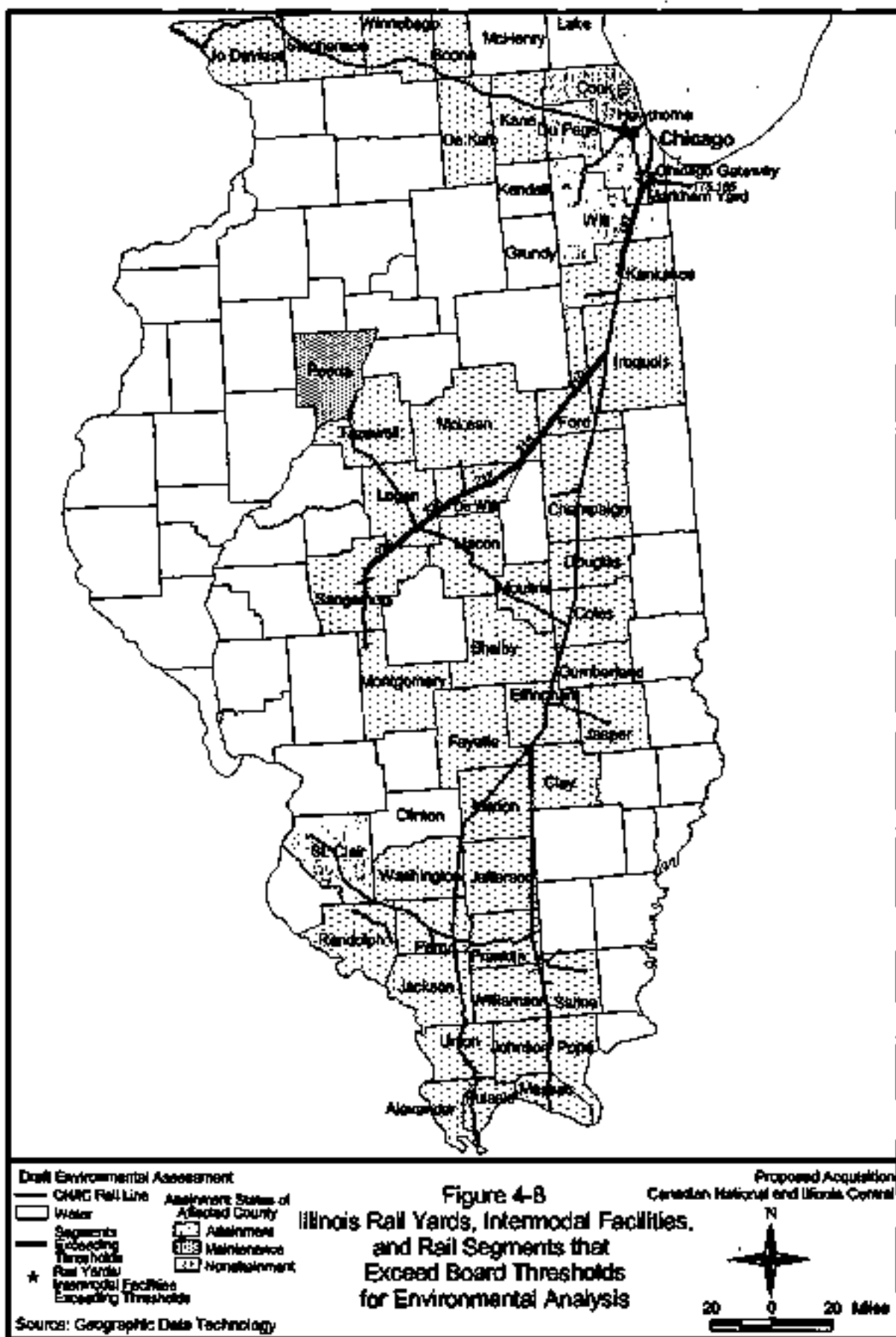
County Attainment Status	Level of Potential Significance
Nonattainment (all criteria pollutants)	1.0% of total emissions inventory for the county
Attainment or Maintenance (all pollutants except PM <sub>10</sub> )	1.6% of total emissions inventory for the county
Attainment or Maintenance for PM <sub>10</sub>	1.0% of total emissions inventory for the county

### Existing Conditions

As discussed in Section 4.1.1.1, "Background," EPA has classified each county as being in "attainment" or "nonattainment" with respect to each criteria pollutant. Figure 4-7, "Attainment Status for Affected Counties," shows a summary of the existing attainment status for each county affected by the proposed CN/IC Acquisition. Appendix F, "Air Quality Analysis Methods and Results," Attachment F-1, "Air Quality Attainment Status by County," presents a detailed breakdown of the attainment status of each county the proposed CN/IC transaction would affect, including the nonattainment area classification types listed in Table 4-22, "Nonattainment Area Classifications for Ozone, CO, and PM<sub>10</sub>." In some cases, EPA has designated portions of a county as a "partial" nonattainment area. EPA designated these portions of counties as nonattainment because of monitored concentrations in the vicinity of known emissions sources located in and around these areas. Of the 156 counties affected by the proposed CN/IC Acquisition, 141 are currently in attainment status, and the other 15 are in various classifications of nonattainment status for one or more of the criteria pollutants. Of these 15 counties, three are in areas where proposed CN/IC activities would meet or exceed Board thresholds for air quality analysis (two in Illinois and one in Michigan).

SEA identified the following existing conditions for rail line segments, rail yards, or intermodal facilities where proposed activities would meet or exceed Board thresholds for air quality analysis:

**Illinois.** SEA identified 11 rail line segments, two rail yards, and one intermodal facility that would meet or exceed the Board's thresholds for environmental analysis in Illinois. Figure 4-8, "Illinois Rail Yards, Intermodal Facilities, and Rail Segments that Exceed Board Thresholds for Environmental Analysis," shows the locations of these rail facilities in the State of Illinois. Emissions sources associated with these rail facilities include the following:



(1) locomotives on rail line segments, (2) locomotives in rail yards, and (3) OTR trucks and heavy equipment (lift equipment and yard trucks) in intermodal facilities. These facilities are located in the following nine Illinois counties:

- Champaign County.
- Cook County.
- De Witt County.
- Ford County.
- Iroquois County.
- Logan County.
- McLean County.
- Sangamon County.
- Will County.

For each of these counties, SEA reviewed EPA monitoring results and determined (where data were available) the number of exceedances of the NAAQS for each criteria pollutant during the 5-year period from 1993 through 1997. This is the most recent 5-year period for which EPA's monitoring results are available. SEA also reviewed EPA emissions inventory data to determine the existing levels of emissions in each of the nine counties. SEA summarized annual emissions from all existing stationary and mobile sources in each county to determine the total emissions inventory. Appendix F, "Air Quality Analysis Methods and Results," contains these data for each county.

Presently in Illinois, of nine counties with rail activities that would meet or exceed the Board's thresholds for environmental analysis, two counties are designated as nonattainment for the criteria pollutants. EPA has determined that Cook County is currently designated as follows: (1) severe nonattainment for ozone, (2) moderate nonattainment for  $PM_{10}$ , and (3) attainment for the remaining criteria pollutants. Will County is designated as severe nonattainment for ozone and in attainment for the remaining criteria pollutants. EPA has determined that the seven other counties analyzed in Illinois are in attainment with the NAAQS for all of the criteria pollutants.

**Michigan.** SEA identified three rail yards located in two counties in Michigan that would meet or exceed the Board's thresholds for environmental analysis:

- Detroit Rail Yard, Wayne County.

- Edison Rail Yard, Wayne County (Trenton, MI).
- Port Huron Rail Yard, St. Clair County.

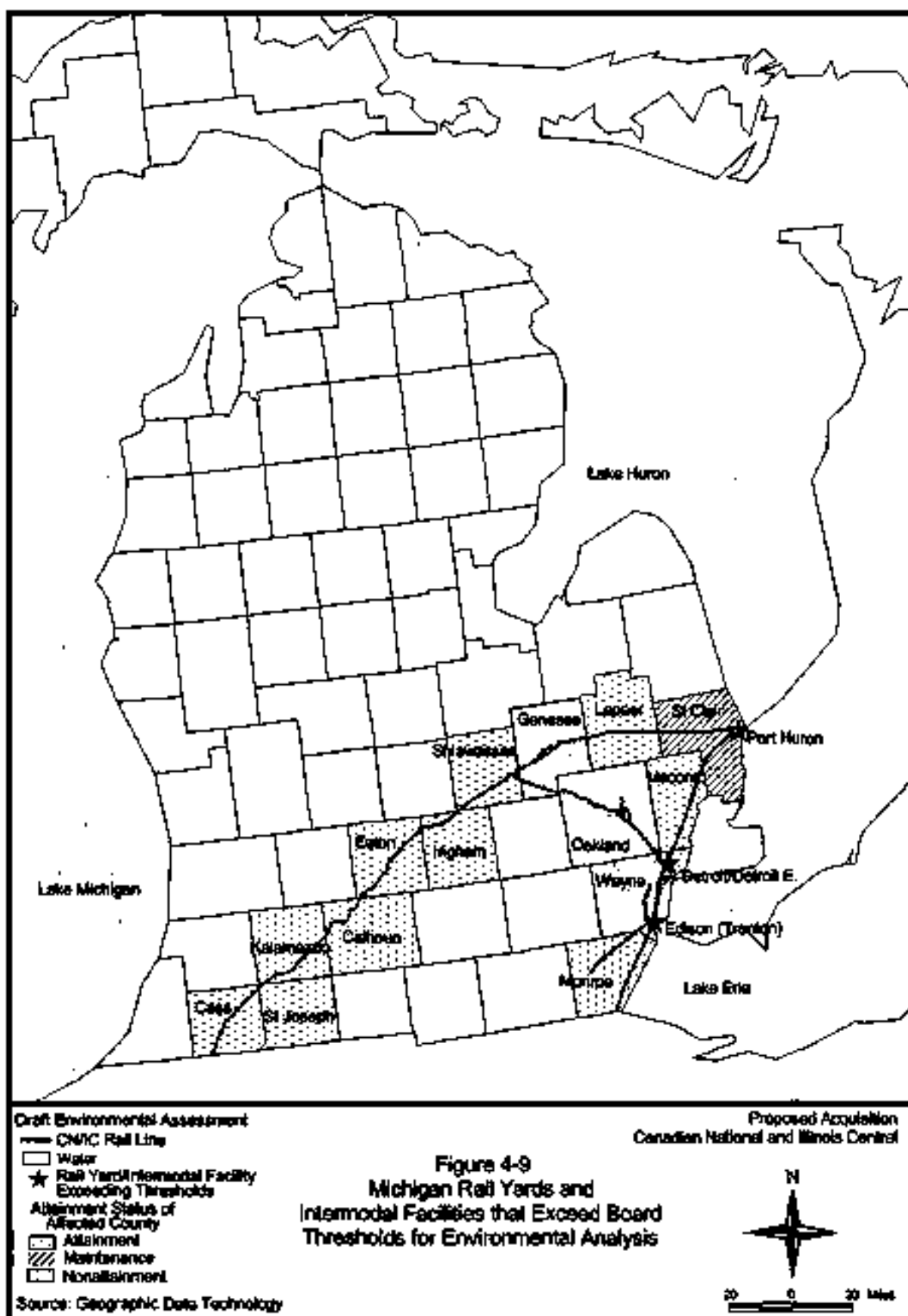
Switch engine locomotives would be the main emissions source in these rail yards.

For both counties, SEA reviewed EPA monitoring results and determined the number of exceedances of the NAAQS for each criteria pollutant during the 5-year period from 1993 through 1997. This is the most recent 5-year period for which EPA's monitoring results are available. SEA also reviewed EPA emissions inventory data to determine the existing levels of emissions in both of the counties. SEA summarized annual emissions from all existing stationary and mobile sources in each county to determine the total emissions inventory. (See Figure 4-9, "Michigan Rail Yards and Intermodal Facilities that Exceed Board Thresholds for Environmental Analysis.") Appendix F, "Air Quality Analysis Methods and Results," contains these data for each county.

Presently, one county in Michigan is in attainment with the NAAQS for criteria pollutants and the other county is in nonattainment for carbon monoxide. EPA has determined that St. Clair County should be as designated in moderate maintenance status for ozone and attainment status for the remaining criteria pollutants. Wayne County is currently designated to be in partial nonattainment status for carbon monoxide, moderate maintenance status for ozone, and attainment status for the remaining criteria pollutants.

### **Analysis Results**

**Illinois.** Estimated emissions levels for  $\text{NO}_x$  in Cook County and Will County in Illinois exceeded the EPA screening criteria that SEA applied for this county-wide air quality analysis. SEA identified six rail line segments, two rail yards, and one intermodal facility in Cook County and one rail line segment in Will County that would meet or exceed the Board's thresholds for environmental analysis. SEA therefore conducted a more detailed analysis of those counties and determined these estimated emissions increases would be insignificant when compared to the existing level of  $\text{NO}_x$  in each county (i.e., would be less than 1 percent of total county-wide emissions). In any event, EPA has granted a  $\text{NO}_x$  waiver for both Cook County and Will County. A  $\text{NO}_x$  waiver is EPA's determination that  $\text{NO}_x$  emissions are not a significant contributor to surface level ozone formation in the county. Based on the insignificant increase in  $\text{NO}_x$  emissions in



Cook County and the NO<sub>x</sub> waiver, SEA does not recommend mitigation measures to reduce NO<sub>x</sub> emissions in those counties.

Table 4-26, "Air Quality Analysis Results for Cook County," and Table 4-27, "NO<sub>x</sub> Emissions Changes for all CN/IC Rail Activities Cook County, Illinois," summarize SEA's analysis for that county. Table 4-28, "Air Quality Analysis Results for Will County," and Table 4-29, "NO<sub>x</sub> Emissions Changes for all CN/IC Rail Activities Will County, Illinois," summarize SEA's analysis for that county.

The tables include:

- A comparison of the existing emissions inventory for the county with the estimated total emissions increases for all of the Applicants' rail activities that would meet or exceed the Board's thresholds for environmental analysis; and
- A comparison of these emissions increases to the EPA screening criteria applied by the Board to determine potential impacts.

**TABLE 4-26**  
**AIR QUALITY ANALYSIS RESULTS FOR COOK COUNTY**

Item	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	VOCs
Existing Emissions Inventory (Tons/Year)	1,014,172	205,606	53,803	315,494	305,408
Projected* Acquisition Related Increase (Tons/Year)	28.4	166.2	14.2	6.9	9.2
EPA Screening Criteria (Tons/Year)	100	25	100	70	25

**TABLE 4-26**  
**AIR QUALITY ANALYSIS RESULTS FOR COOK COUNTY**

Item	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	VOCs
Net Increase (Tons/Year) (Percent of Emissions Inventory)	—	186.4  (0.08%)	—	—	—
Conclusion	No Exceedance of Screening Threshold	Exceedance of Screening Threshold; no adverse impacts	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold

<sup>a</sup> Includes activities that meet or exceed the Board's thresholds for air quality analysis.

**TABLE 4-27**  
**NO<sub>x</sub> EMISSIONS CHANGES FOR ALL CN/IC RAIL ACTIVITIES**  
**COOK COUNTY, ILLINOIS<sup>a</sup>**

Emissions Source	Estimated NO <sub>x</sub> (Tons per Year)
Rail Line Segments	184.4
Rail Yards <sup>b</sup>	1.8
Intermodal Facilities	1.2
Truck-to-rail Diversions	-1.1
Total Net Emissions	186.4
Significance Criteria <sup>c</sup> (1% of total county-wide NO <sub>x</sub> emissions)	2,056
Significance Criteria Exceeded	None

<sup>a</sup> Includes all Acquisition-related activities in Cook County.

<sup>b</sup> Emissions changes are from rail car switching activity. SEA included emissions changes from block swapping in the rail line segments emissions estimates.

<sup>c</sup> SEA based this value on the O<sub>3</sub> nonattainment area level of potential significance (i.e., 1 percent of the existing NO<sub>x</sub> emissions inventory for Cook County as presented in Table 4-27).

**TABLE 4-28**  
**AIR QUALITY ANALYSIS RESULTS FOR WILL COUNTY**

	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	VOCs
Existing Emissions Inventory (Tons/Year)	104,241	57,329	94,224	41,994	47,577
Projected* Acquisition Related Increase (Tons/Year)	11.0	111.5 <sup>a</sup>	10.3	2.7	4.1
EPA Screening Criteria (Tons/Year)	100	25	100	100	25
Net Increase (Tons/Year) (Percent of Emissions Inventory)	—	109.6 (0.19%)	—	—	—
Conclusion	No Exceedance of Screening Threshold	Exceedance of Screening Threshold; no adverse impacts	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold

\* Includes activities that meet or exceed the Board's thresholds for air quality analysis.

**TABLE 4-29**  
**NO<sub>x</sub> EMISSIONS CHANGES FOR ALL CN/IC RAIL ACTIVITIES**  
**WILL COUNTY, ILLINOIS**

Emissions Source	Estimated Emissions Changes (Tons/Year)
Rail Line Segments	111.5
Rail Yards	0
Intermodal Facilities	0
Truck-to-rail Diversions	-1.9
Idling Vehicles At Highway/Rail At-grade Crossings	0.008
Total Net Emissions	109.6
Significance Criteria <sup>a</sup> (1% of total county-wide NO <sub>x</sub> emissions)	573
Significance Criteria Exceeded	None

\* SEA based this value on the O<sub>3</sub> nonattainment area level of potential significance (i.e., 1 percent of the existing NO<sub>x</sub> emissions inventory for Will County, as presented in Table 4-25, "Levels of Potential Significance").



Estimated emissions in the remaining seven counties in Illinois would not exceed the EPA screening criteria for any of the criteria pollutants. Appendix F, "Air Quality Analysis Methods and Results," contains a more detailed description of the analysis performed to determine the potential impacts of the proposed Acquisition. Tables 4-30 through 4-36 present summaries of SEA's analysis for each of the following counties:

- Champaign County—One rail line segment would meet or exceed the Board's thresholds for environmental analysis. (See Table 4-30, "Air Quality Analysis Results for Champaign County.")
- DeWitt County—Three rail line segments would meet or exceed the Board's thresholds for environmental analysis. (See Table 4-31, "Air Quality Analysis Results for De Witt County.")
- Ford County—Two rail line segments would meet or exceed the Board's thresholds for environmental analysis. (See Table 4-32, "Air Quality Analysis Results for Ford County.")
- Iroquois County—One rail line segment would meet or exceed the Board's thresholds for environmental analysis. (See Table 4-33, "Air Quality Analysis Results for Iroquois County.")
- Logan County—Two rail line segments would meet or exceed the Board's thresholds for environmental analysis. (See Table 4-34, "Air Quality Analysis Results for Logan County.")
- McLean County—One rail line segment would meet or exceed the Board's thresholds for environmental analysis. (See Table 4-35, "Air Quality Analysis Results for McLean County.")
- Sangamon County—One rail line segment would meet or exceed the Board's thresholds for environmental analysis. (See Table 4-36, "Air Quality Analysis Results for Sangamon County.")

The tables include:

- A comparison of the existing emissions inventory for the county with the estimated total emissions increases for all of the Applicants' rail activities that would meet or exceed the Board's thresholds for environmental analysis; and
- A comparison of these emissions increases to the EPA screening criteria applied by the Board to determine potential impacts.

**TABLE 4-30  
AIR QUALITY ANALYSIS RESULTS  
FOR CHAMPAIGN COUNTY**

	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	VOCs
Existing Emissions Inventory (Tons/Year)	57,711	10,309	2,212	27,874	13,027
Projected Acquisition Related Increase (Tons/Year)	0.02	0.2	0.02	0.01	0.01
EPA Screening Threshold (Tons/Year)	100	100	100	100	100
Conclusion	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold

**TABLE 4-31  
AIR QUALITY ANALYSIS RESULTS  
FOR DE WITT COUNTY**

	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	VOCs
Existing Emissions Inventory (Tons/Year)	6,511	1,074	43	8,014	1,352
Projected Acquisition Related Increase (Tons/Year)	2.8	28.0	2.6	0.7	1.03
EPA Screening Criteria (Tons/Year)	100	100	100	100	100
Conclusion	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold

**TABLE 4-32  
AIR QUALITY ANALYSIS RESULTS  
FOR FORD COUNTY**

	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	VOCs
Existing Emissions Inventory (Tons/Year)	5,334	917	37	10,426	3,363
Projected Acquisition Related Increase (Tons/Year)	2.16	21.9	2.03	0.5	0.8
EPA Screening Criteria (Tons/Year)	100	100	100	100	100
Conclusion	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold

**TABLE 4-33  
AIR QUALITY ANALYSIS RESULTS  
FOR IROQUOIS COUNTY**

	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	VOCs
Existing Emissions inventory (Tons/Year)	13,196	2,158	97	23,123	2,671
Projected Acquisition Related Increase (Tons/Year)	0.8	8.2	0.8	0.2	0.3
EPA Screening Criteria (Tons/Year)	100	100	100	100	100
Conclusion	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold

**TABLE 4-34  
AIR QUALITY ANALYSIS RESULTS  
FOR LOGAN COUNTY**

	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	VOCs
Existing Emissions inventory (Tons/Year)	11,867	2,229	5,970	13,054	2,535
Projected Acquisition Related Increase (Tons/Year)	1.8	18.8	1.7	0.5	0.7
EPA Screening Criteria (Tons/Year)	100	100	100	100	100
Conclusion	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold

**TABLE 4-35  
AIR QUALITY ANALYSIS RESULTS  
FOR MCLEAN COUNTY**

	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	VOCs
Existing Emissions inventory (Tons/Year)	44,035	6,813	282	29,639	8,944
Projected Acquisition Related Increase (Tons/Year)	0.9	9.3	0.9	0.2	0.3
EPA Screening Criteria (Tons/Year)	100	100	100	100	100
Conclusion	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold

**TABLE 4-36  
AIR QUALITY ANALYSIS RESULTS  
FOR SANGAMON COUNTY**

	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	VOCs
Existing Emissions inventory (Tons/Year)	60,489	20,289	38,547	27,667	11,720
Projected Acquisition Related Increase (Tons/Year)	2.0	20.2	1.9	0.5	0.7
EPA Screening Criteria (Tons/Year)	100	100	100	100	100
Conclusion	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold

**Michigan.** The Applicants identified one rail yard in St. Clair County and two rail yards in Wayne County that would meet or exceed the Board's thresholds for environmental analysis. SEA determined that St. Clair County and Wayne County would not exceed the EPA screening criteria for any of the criteria pollutants. Therefore, SEA did not recommend mitigation measures to reduce emissions in these counties.

Table 4-37, "Air Quality Analysis Results for St. Clair County," and Table 4-38, "Air Quality Analysis Results for Wayne County," summarize SEA's air quality analysis.

**TABLE 4-37  
AIR QUALITY ANALYSIS RESULTS  
FOR ST. CLAIR COUNTY**

	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	VOCs
Existing Emissions Inventory (Tons/Year)	47,611	101,908	73,077	13,062	14,104
Projected Acquisition Related Increase (Tons/Year)	0.1	1.4	0.1	0.03	0.1
EPA Screening Criteria (Tons/Year)	100	100	100	100	100
Conclusion	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold

**TABLE 4-38  
AIR QUALITY ANALYSIS RESULTS  
FOR WAYNE COUNTY**

	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	VOCs
Existing Emissions Inventory (Tons/Year)	644,458	124,884	63,633	99,861	152,774
Projected Acquisition Related Increase (Tons/Year)	0.3	3.0	0.2	0.1	0.2
EPA Screening Criteria (Tons/Year)	50	100	100	100	100
Conclusion	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold	No Exceedance of Screening Threshold

#### 4.11.4 New Air Quality Regulations

SEA identified new EPA regulations that, when implemented, could modify SEA's analysis but not its conclusions. These new regulations address locomotives emissions and new NAAQS, as discussed in the following sections. For more detail on these new regulations, also see Appendix F, "Air Quality Analysis Methods and Results."

##### **New Emissions Standards for Locomotives and Locomotive Engines**

On April 16, 1998, EPA issued its final rule establishing standards for locomotives and locomotive engines (40 CFR Parts 85, 89, and 92). This rule will take effect in the year 2000 and will ultimately result in more than a 60 percent reduction in oxides of nitrogen ( $\text{NO}_x$ ) emissions from locomotives. In the past, EPA has not regulated these locomotive emissions. Railroads will achieve these reductions by employing new or remanufactured locomotives equipped with emissions control systems (e.g., locomotives equipped with a retrofitting kit to control  $\text{NO}_x$  emissions).

In addition to these new  $\text{NO}_x$  standards, EPA established new locomotive emissions standards for hydrocarbons (HC), carbon monoxide (CO), PM, and smoke. This national program to control locomotive emissions will result in health and environmental benefits. This program will also help states comply with new NAAQS for ozone and PM.

EPA proposed to adopt the new emissions standards in three phases known as: (1) Tier 0—emissions standards that will be applicable to locomotives manufactured before 2002 and to certain model year remanufactured locomotives; (2) Tier 1—emissions standards that apply to locomotives manufactured between 2002 and December 31, 2004; and (3) Tier 2—emissions standards that apply to locomotives manufactured on or after January 1, 2005. These standards are increasingly stringent.

In this Draft EA, SEA estimated the changes in emissions from locomotives on their rail line segments using uncontrolled emissions factors that were representative of the 1998 locomotive operating fleet. The emissions standards in the final rule will take effect in the year 2000; therefore, the Applicants'  $\text{NO}_x$  emissions will be lower than the emissions estimates provided in this analysis when the Applicants comply with these new standards. The Applicants did not apply emissions factors representative of EPA's final rule for locomotive emissions standards because the Applicants have not yet modified the current fleet of locomotives to emit lower levels of  $\text{NO}_x$ . Based on this information, SEA concludes that the new emissions standards regulations will

ultimately lead to a decrease of locomotive emissions and thus will benefit ambient air quality.

**Future Attainment Status  
Redesignations for  
Particulate Matter and  
Ozone**

SEA directed the Applicants to consider changes in EPA's new, more stringent NAAQS. In these new NAAQS, which became effective on September 16, 1997, EPA:

- Created a new standard of  $15 \mu\text{g}/\text{m}^3$  for particulate matter with a diameter less than 2.5 microns ( $\text{PM}_{2.5}$ ).
- Maintained the existing annual standard of 50 micrograms per cubic meter for particulate matter with a diameter less than 10 microns ( $\text{PM}_{10}$ ) but adjusted the  $\text{PM}_{10}$  24-hour standard of 150 micrograms per cubic meter by changing the form of the standard to  $65 \mu\text{g}/\text{m}^3$ .
- Created a new standard of 0.08 ppm for ozone.

EPA estimates that some counties currently in attainment will become nonattainment areas as a result of these new NAAQS. However, for  $\text{PM}_{2.5}$ , EPA believes that presently not enough monitoring data are available to accurately project which counties would change attainment status. EPA is currently setting up a nationwide  $\text{PM}_{2.5}$  monitoring network; however, according to EPA, the  $\text{PM}_{2.5}$  monitoring data will not be available for a few years.

EPA currently has sufficient data to determine which counties will likely become nonattainment based on the new 8-hour ozone standard. SEA reviewed EPA's list of counties<sup>34</sup> and the CN/IC Operating Plan and determined that a potential attainment status change (from ozone attainment to nonattainment) for Champaign County, Illinois would result in two additional rail line segments (i.e., from Gilman, Illinois to Champaign, Illinois and from Champaign, Illinois to Mattoon, Illinois) and one additional rail yard (Champaign Yard, Illinois) exceeding the Board's thresholds for environmental analysis. Champaign County is the only county that EPA predicts would experience a change in attainment status and cause additional rail activities to exceed the Board's thresholds

<sup>34</sup> Data Source: <http://safetydata.fra.dot.gov/officeofsafety/>



for environmental analysis.<sup>79</sup> SEA determined that counties in which attainment status changes from nonattainment to attainment would result in a net improvement in air quality would not warrant additional analysis.

Currently, Champaign County is designated attainment for all criteria pollutants. Champaign County is primarily a rural county except for the cities of Champaign-Urbana which are located in the center of the county. The ozone monitors in Champaign County are located in Champaign-Urbana where the potential for ozone formation is greatest. Since surface-level ozone formation is primarily caused by emissions from vehicles and industrial sources, the Applicants assumed that most of the NO<sub>x</sub> emissions in Champaign County are from sources in Champaign-Urbana; therefore, cumulative effects would most likely occur where the Applicants' operations coincide with these urban areas of the county. The Applicants operate about 3.6 miles of rail line and one rail yard within the City of Champaign. The Applicants estimated that these operations in the City of Champaign would emit about 82 tons per year of NO<sub>x</sub>, which is below the Board's 1 percent level of potential significance for Champaign County. Therefore, SEA concluded that cumulative effects from a potential change in attainment status would not be significant. In addition, SEA determined that the new locomotive emissions standards would further reduce NO<sub>x</sub> emissions in Champaign county after these standards take effect in the year 2000.

Appendix F, "Air Quality Analysis Methods and Results," contains additional information regarding these new NAAQS.

#### **SEA's Conclusion**

SEA concludes that the proposed CN/IC Acquisition would not result in any significant adverse impacts on air quality at the county level. Therefore, SEA does not recommend air quality mitigation measures.

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<sup>79</sup> According to EPA Region V, the redesignation of Champaign County to nonattainment status would occur in the year 2000, based on monitoring data that EPA collects from 1997 through 1999. No exceedances of the ozone 8-hour standard have occurred in Champaign County to date from data that EPA collected in 1997. If this trend continues, it is possible that EPA may not redesignate Champaign County to nonattainment status.

## 4.12 NOISE

As a result of the proposed CN/IC Acquisition, additional train traffic on rail line segments and the increased freight handled at rail yards and intermodal facilities could increase noise in communities near some of the Applicants' facilities. To determine whether these noise increases would have significant adverse effects, SEA evaluated potential increased noise for the rail line segments, rail yards, and intermodal facilities that met the Board's thresholds for noise analysis. Section 4.12 describes the results of the noise analysis. As discussed below, SEA determined that the proposed CN/IC Acquisition would result in no significant adverse noise effects along rail line segments or adjacent to rail yards and intermodal facilities. Therefore, SEA does not recommend mitigation for potential noise impacts.

### 4.12.1 Noise Evaluation—Summary

#### Board's Thresholds for Analysis

The Board's thresholds for environmental analysis, as defined by 49 CFR 1105.7(e)(6), specify noise analysis for the following:

- All rail line segments where traffic would, as a result of the proposed CN/IC Acquisition, increase by at least eight trains per day or at least 100 percent as measured in annual gross ton-miles.
- All rail yards with an increase in carload activity of at least 100 percent.
- All intermodal facilities with an increase of at least 50 trucks per day or 10 percent of the average daily traffic on affected roadways, including passenger cars and trucks.

Based on the Applicants' Operating Plan, SEA identified six rail line segments (all located in Illinois), one rail yard, and one intermodal facility that would exceed the Board's thresholds for noise analysis. The rail yard is in Port Huron, Michigan. The intermodal facility is in the Chicago, Illinois metropolitan area.

#### Methods

As the Board rules specify at 49 CFR 1105.7(e)(6), SEA used  $L_{dn}$ , the day-night equivalent sound level to characterize community noise.  $L_{dn}$  is a measure of cumulative noise over a 24-hour period, adjusted to account for the perception that a noise at night is more bothersome than the same noise during the day. The unit for  $L_{dn}$  is the dBA, or A-weighted decibel. A-weighting approximates the manner in which the human ear responds to sound. Figure 4-10, "Typical  $L_{dn}$  Levels for Communities," illustrates typical  $L_{dn}$  levels for various types of communities and activities.

## Non-Transit Sources



Leq

One freight train  
per day during  
daytime hours

Three freight trains  
during daytime hours,  
One during nighttime hours

Three freight trains  
during daytime hours,  
One during nighttime hours,  
close to highway/rail  
at-grade crossing

30 freight trains  
per day equally distributed  
between daytime and  
nighttime hours;  
near highway/rail  
at-grade crossing

## Railroad Sources (All at 100 feet)



30 freight trains  
per day equally distributed  
between daytime and  
nighttime hours

Figure 4-10  
Typical Leq Levels for Communities

The Board's rules further specify that the noise analysis should determine the number of noise-sensitive receptors (residences, schools, hospitals, and churches) in two areas:

- Those areas that would experience an  $L_{dn}$  of 65 dBA or greater (regardless of the incremental increase).
- Those areas with an incremental increase of 3 dBA  $L_{dn}$  or greater.

These Board thresholds for noise are consistent with other Federal agencies' noise criteria and are based on well-established noise annoyance studies of transportation activities. Agencies charged with environmental noise assessment and the scientific community agree that noise levels at or above these thresholds are adverse.

The proposed CN/IC Acquisition would change noise levels near rail line segments, rail yard facilities, intermodal facilities, and highway/rail at-grade crossings where operating changes would occur. The following discussion summarizes the procedures SEA used to estimate the noise levels near these facilities. Appendix G, "Noise Analysis Methods and Results," provides a more detailed discussion of the procedures.

The operation of freight trains and related activities at rail yards and intermodal facilities creates numerous noise sources. Some of the main noise sources include the following: (1) steel wheels of locomotives and rail cars rolling on steel rails, (2) engine and exhaust noise associated with locomotives, (3) train horns at highway/rail at-grade crossings, and (4) equipment (e.g., switching engines at rail yards and cranes at intermodal facilities). SEA used actual field measurements or published data to estimate the noise that would be produced by these sources. SEA then used noise models developed by EPA and other experts on noise analysis to predict noise levels at different distances from these sources under a variety of operating conditions.

SEA used the noise models to identify areas where the noise levels would be at least 65 dBA before and after the proposed CN/IC Acquisition. Federal agencies, including the Federal Aviation Administration and the Department of Housing and Urban Development, consider noise levels up to 65 dBA  $L_{dn}$  to be compatible with most noise-sensitive receptors (residences, schools, hospitals, and churches).

To estimate noise levels, SEA considered the following: the number of trains per day; the average train length; the average number of locomotives per train; and the reference sound levels for locomotives, warning train horns, and freight cars. Appendix G, "Noise Analysis Methods and Results," presents the data used to derive the reference sound levels. SEA made the following assumptions in developing the noise projections:

- All trains for both the pre- and post-Acquisition condition have an average of 2.2 locomotives.
- The average pre-Acquisition train length is 4,225 feet, including rail cars and locomotives. The average post-Acquisition train length would be 5,026 feet.
- The average train speed is 40 miles per hour on each of the rail line segments.

SEA counted the number of noise-sensitive receptors within the 65 dBA  $L_{dn}$  noise contours before and after the proposed CN/IC Acquisition. A noise contour is a line plotted on a map connecting points of equal sound levels. By using detailed maps, aerial photographs, and field surveys, the Applicants identified noise-sensitive receptors where the  $L_{dn}$  would equal at least 65 dBA before and after the proposed CN/IC Acquisition. SEA then determined, based on noise estimates of the Acquisition-related increase in railroad activities, whether any of these receptors that would experience 65 dBA  $L_{dn}$  in the post-Acquisition case would experience an increase greater than 3 dBA  $L_{dn}$ . Wherever SEA identified noise-sensitive receptors that would experience noise levels of 65 dBA  $L_{dn}$  and an increase of at least 3 dBA  $L_{dn}$  based on this general analysis, SEA conducted a more detailed analysis. SEA identified any other railroads operating on the rail lines, the schedule of train traffic, and the related noise effects to determine if noise levels would exceed 65 dBA  $L_{dn}$  with an increase of 3 dBA  $L_{dn}$ .

#### **Criteria of Significance**

SEA established the following criteria for determining adverse noise effects: (1) 65 dBA or greater  $L_{dn}$  from rail operations, and (2) an increase in  $L_{dn}$  of 3 dBA or greater.

#### **Existing Conditions**

SEA determined the existing noise levels for each of the six rail line segments, one intermodal facility, and one rail yard that exceeded the Board's thresholds for environmental analysis.

**Rail Line Segments.** The six rail line segments all included highway/rail at-grade crossings, where locomotive engineers sound train horns. SEA calculated existing (i.e., pre-Acquisition) noise levels (expressed in  $L_{dn}$ ) for both horn noise and wayside noise for each segment using the models described in the "Methods" section.

For the rail line segments at issue, SEA calculated both wayside noise and horn noise. Locomotive engineers generally sound train warning horns before every highway/rail at-grade crossing, starting ¼ mile before the crossing. In developing train horn noise projections, SEA assumed that the locomotive engineers would sound warning horns in a long-long-short-long sequence, completed as the lead locomotive enters the crossing. SEA assumed that beyond ¼ mile of the highway/rail at-grade crossings, the primary source of noise is wayside noise. The source of wayside noise is steel wheels of locomotives and rail cars rolling on steel rails and engine and exhaust noise associated with locomotives.

Warning train horns are designed to be loud to provide sufficient warning to the public that a train is approaching a highway/rail at-grade crossing. Thus, at highway/rail at-grade crossings where engineers sound warning horns on a regular basis, the 65 dBA contour extends much farther from the tracks than along rail line segments where wayside noise is the only source of noise.

Using the noise model results, SEA determined the 65 dBA  $L_{dn}$  noise contour for the intermodal facility, the rail yard, and each of the six rail line segments and then counted the number of noise-sensitive receptors within the contour. Table 4-39, "Pre-Acquisition Number of Noise-sensitive Receptors Within the 65 dBA  $L_{dn}$  Contour," shows the results of this analysis. In all, SEA estimated that 470 noise-sensitive receptors occur within the 65 dBA contour for the pre-Acquisition train volumes.

**TABLE 4-39**  
**PRE-ACQUISITION NUMBER OF NOISE-SENSITIVE**  
**RECEPTORS WITHIN 65 dBA L<sub>dn</sub> CONTOUR**

Rail Activities	Pre-Acquisition Number of Noise-sensitive Receptors within the 65 dBA L <sub>dn</sub> Contour	
	Wayside Noise	Horn Noise
<b>Rail Line Segments</b>		
Mount Pulaski, IL to Springfield, IL	0	53
Clinton, IL to Mount Pulaski, IL	0	76
Fullerton, IL to Clinton, IL	0	19
Gibson City, IL to Fullerton, IL	0	3
Gilman, IL to Gibson City, IL	0	20
Hawthorne Yard, IL to Broadview, IL	83	216
<b>Facilities</b>		
Port Huron Rail Yard	0	
Moyers/Gateway Intermodal Facility	0	
<b>Total</b>	<b>479</b>	

Table 4-40, "Rail Line Segment—Community Descriptions," summarizes the characteristics (rural, suburban, etc.) of the communities and receptors found along these rail line segments. (For more details regarding these community characteristics, see Attachment G-1, "Noise Assessment Summaries," of Appendix G, "Noise Analysis Methods and Results.")

**Rail Yards.** SEA's analysis shows that activity at the CN yard at Port Huron, Michigan would increase from an average of eight rail cars per day to 24 rail cars per day, which would exceed the Board's threshold for noise analysis. At the yard, switching would be the primary source of Acquisition-related noise resulting from increased activity. Switching activities occur 900 feet or more from the closest noise-sensitive receptors.

TABLE 4-40  
RAIL LINE SEGMENT—COMMUNITY DESCRIPTIONS

Rail Line Segment	Community Description	Number of Highway/Rail At-grade Crossings
Mount Palauki, IL to Springfield, IL	This rail line segment starts at the connection with the IC tracks in western Springfield, Illinois and runs northeasterly parallel to State Route 54, passing through several small towns. The length of this rail line segment is 23.1 miles. The rail line segment ends in southern Mount Palauki, Illinois at the connection with the north-south IC line. The Applicants estimated that 53 residences are within the 65 dBA contour for the pre-acquisition train volume; all of these noise-sensitive receptors are within ¼ mile of a highway/rail at-grade crossing.	6
Clinion, IL to Mount Palauki, IL	This rail line segment originates at the IC track in the southwestern part of Mount Palauki, Illinois and proceeds in a northeasterly parallel to State Route 54, passing through several small towns. The length of the rail line segment is 20.4 miles. The rail line segment ends in Clinion, Illinois at the connection with the north-south IC branch rail line. The Applicants estimated that 76 residences are within the 65 dBA contour for the pre-acquisition train volume; all of these noise-sensitive receptors are within ¼ mile of a highway/rail at-grade crossing.	12
Fullerton, IL to Clinion, IL	This rail line segment originates at the connection with the north-south IC line in the center of Clinion, Illinois and runs northeasterly, parallel to State Route 54 to Fullerton, Illinois, over a distance of 12 miles. The Applicants estimated that 19 residences are within the 65 dBA contour for the pre-acquisition train volume; all of these noise-sensitive receptors are within ¼ mile of a highway/rail at-grade crossing.	4
Gibson City, IL to Fullerton, IL	This rail line segment originates in Fullerton, Illinois and runs to the north and east, parallel to State Route 54, for 26.2 miles. The segment passes through several small towns and ends in southeastern Gibson City, Illinois at the connection with the east-west Norfolk Southern rail line. The Applicant estimated that three residences are within the 65 dBA contour for the pre-acquisition train volume; all of these noise-sensitive receptors are within ¼ mile of a highway/rail at-grade crossing.	5
Gilman, IL to Gibson City, IL	This rail line segment originates at the connection with the Norfolk Southern rail line in southwestern Gibson City, Illinois and runs parallel to State Route 54 for 29.1 miles. The rail line segment passes through several small communities and ends in southern Gilman, Illinois at the rail connection with the north-south IC line. The Applicants estimated that 20 residences are within the 65 dBA contour for the pre-acquisition train volume; all of these noise-sensitive receptors are within ¼ mile of highway/rail at-grade crossings.	13
Hawthorne Yard, IL to Broadview, IL	This IC rail line segment runs 6.2 miles from the western edge of Hawthorne Yard, Illinois to the highway/rail at-grade crossing in Broadview, Illinois which is in the Chicago metropolitan area. The line runs through a mix of residential, commercial, and industrial areas. Nine highway/rail at-grade crossings occur along the alignment. The Applicants estimated that the increased rail traffic would cause a 1.9 dBA increase in $L_{50}$ at locations within ¼ mile from highway/rail at-grade crossings and an increase of 1.5 dBA at locations further than ¼ mile from the crossings. The Applicants estimated that 299 residences are within the 65 dBA contour for the pre-acquisition train volume; 216 of these noise-sensitive receptors are within ¼ mile of highway/rail at-grade crossings.	9



The Port Huron yard is in an area where land use is mainly industrial and is surrounded by major roads; I-94 lies to the west, Griswold Road lies to the north, and Michigan Road lies to the east. Consequently no noise-sensitive receptors lie within the pre-Acquisition 65 dBA  $L_{dn}$  contour, and traffic on the surrounding roads as well as mainline train traffic are the dominant sources of noise in the vicinity of this rail yard.

**Intermodal Facilities.** The Applicants expect truck traffic to increase by 88 trucks per day at the Moyers/Chicago Gateway Intermodal Facility in Harvey, Illinois (Moyers). This increase would exceed the Board's threshold for noise analysis. This facility contains both IC and CN (Grand Trunk Western) terminals. The rail yard extends south to southwest from 159<sup>th</sup> Street to 171<sup>st</sup> Street. On the east is a large industrial area and on the west is Park Street. The tracks of the main IC north-south rail line and the Metra commuter rail line pass by the western border of the rail yard. The Applicants identified no noise-sensitive receptors adjacent to the Moyers facility that lie within the pre-Acquisition 65 dBA  $L_{dn}$  noise contour.

## Analysis Results

Using information about train traffic changes from the Applicants' Operating Plan, SEA determined the location of the post-Acquisition 65 dBA  $L_{dn}$  noise contour. Based on the model results, SEA estimated that the 65 dBA  $L_{dn}$  contour would extend to a distance of 70 to 160 feet from the centerline of the mainline track for these six line segments. SEA then counted the number of noise-sensitive receptors within the post-Acquisition 65 dBA  $L_{dn}$  contour. In all, SEA determined that 803 noise-sensitive receptors lie within the post-Acquisition 65 dBA  $L_{dn}$  contour (106 in areas affected only by wayside noise and 697 in areas affected by horn noise). On all except the Hawthorne Yard-to-Broadview line segment, SEA determined in both the pre- and post-Acquisition cases, all of these receptors lie within ¼ mile of a highway/rail at-grade crossing, where the predominant source of noise is train horns. Table 4-41, "Noise-sensitive Receptors within 65 dBA  $L_{dn}$  Noise Contour," shows the pre- and post-Acquisition number of receptors in the 65 dBA  $L_{dn}$  noise contour.

**TABLE 4-41**  
**NOISE-SENSITIVE RECEPTORS WITHIN 65 dBA  $L_{dn}$  NOISE CONTOUR**

Line Segment	Pre-Acquisition Number of Noise- Sensitive Receptors within Existing $L_{dn}$ 65-dBA Contour		Post-Acquisition Number of Noise- Sensitive Receptors within Existing $L_{dn}$ 65 dBA Contour		Change in Number of Noise- Sensitive Receptors within Existing $L_{dn}$ 65 dBA Contour	
	Wayside	Horn	Wayside	Horn	Wayside	Horn
Mount Pulaski, IL to Springfield, IL	0	53	0	140	0	87
Clinton, IL to Mount Pulaski, IL	0	76	0	150	0	74
Fullerton, IL to Clinton, IL	0	19	0	34	0	15
Gibson City, IL to Fullerton, IL	0	3	0	15	0	12
Gilman, IL to Gibson City, IL	0	20	0	66	0	46
Hawthorne Yard, IL to Broadview, IL	83	216	106	292	23	76
<b>Total</b>	<b>83</b>	<b>387</b>	<b>106</b>	<b>697</b>	<b>23</b>	<b>310</b>

SEA then determined whether any of these 803 receptors would experience an increase greater than 3 dBA  $L_{dn}$ . Table 4-42, "Rail Line Segments—Increase in  $L_{dn}$ ," shows, by rail line segment, SEA's projected increase in both wayside and train horn noise levels. As shown, only three rail line segments would experience an increase of 3 dBA or greater.

**TABLE 4-42**  
**RAIL LINE SEGMENTS—INCREASE IN  $L_{dn}$**

Line Segment	Average Number of Trains Per Day		Increase in $L_{dn}$	
	Pre-Acquisition	Post-Acquisition	Line Segment <sup>a</sup> (dBA)	Highway/Rail At-grade Crossings <sup>b</sup> (dBA)
Mount Pulaski, IL to Springfield, IL	2.30	3.72	2.7	2.2
Clinton, IL to Mount Pulaski, IL	1.72	3.14	3.2	2.7
Fullerton, IL to Clinton, IL	2.58	4.00	2.5	2.0
Gibson City, IL to Fullerton, IL	0.86	2.28	4.8	4.4
Gilman, IL to Gibson City, IL	0.86	2.28	4.8	4.4
Hawthorne Yard, IL to Broadview, IL	6.58	9.00	1.9	1.5

<sup>a</sup> The increase in  $L_{dn}$  is on the portions of rail line segments located at least ¼ mile from a highway/rail at-grade crossing.

<sup>b</sup> The increase in  $L_{dn}$  is within ¼ mile of highway/rail at-grade crossings where train horns sound as a warning to motorists and pedestrians.

SEA evaluated which receptors would experience a post-Acquisition noise level of 65 dBA  $L_{dn}$  or greater and an increase in  $L_{dn}$  of 3 dBA or greater. Table 4-43, "Noise Analysis Results," summarizes SEA's analysis results.

In all, SEA identified 81 noise-sensitive receptors along two rail line segments that initially met SEA's criteria and warranted more detailed analysis. All of these receptors occur in areas affected by horn noise (within ¼ mile of highway/rail at-grade crossings). The receptors are along the Gilman, Illinois-to-Gibson City, Illinois and Gibson City-to-Fullerton, Illinois rail line segments. The affected communities include:

- Farmer City.
- Gibson City.
- Melvin.
- Roberts.

**TABLE 4-43**  
**NOISE ANALYSIS RESULTS**

Line Segment	Number of Noise-sensitive Receptors within 65 dBA $L_{dn}$ Contour						Increase in $L_{dn}$		Noise-sensitive Receptors with Adverse Effects <sup>a</sup>	
	Pre-Acquisition		Post-Acquisition		Change					
	Wayside	Horn	Wayside	Horn	Wayside	Horn	Wayside	Horn	Wayside	Horn
Mount Pulaski, IL to Springfield, IL	0	53	0	140	0	87	2.7	2.2	0	0
Clinton, IL to Mount Pulaski, IL	0	76	0	150	0	74	3.2	2.7	0	0
Fullerton, IL to Clinton, IL	0	19	0	34	0	15	2.5	2.0	0	0
Gibson City, IL to Fullerton, IL	0	3	0	15	0	12	4.8	4.4	0	15
Gilman, IL to Gibson City, IL	0	20	0	66	0	46	4.8	4.4	0	66
Hawthorne Yard, IL to Broadview, IL	83	216	106	292	23	76	1.9	1.5	0	0
Total	83	387	106	697	23	310	—	—	0	81

<sup>a</sup> Adverse effects include those receptors that would experience a post-Acquisition noise level of 65 dBA and an increase of at least 3 dBA  $L_{dn}$ .

SEA carefully reviewed the noise analysis results, the noise levels, and the local conditions on the two rail line segments that would experience adverse noise effects. SEA determined the following:

- The additional train traffic would result from anticipated unit automotive trains (10 per week) on the segments, which are high priority trains that would be scheduled from Toronto to Kansas City. The trains would travel on these two segments during the daytime.
- Norfolk Southern (NS) currently operates 20 trains per week (2.8 trains per day) via existing trackage rights over the Gilman, Illinois to Gibson City, Illinois rail line segment.
- Conrail trains operate adjacent to the Gibson City, Illinois and Fullerton, Illinois rail line segments in Farmer City, Illinois.

SEA completed a more detailed noise analysis of the two rail line segments considering this more detailed information. SEA's initial

noise analysis assumed that trains pass any given location randomly during the course of the day or night. The noise model assigns a noise penalty for trains operating at night to account for people's increased sensitivity to noise. This penalty, which equates one train at night to ten trains during the day, is used to calculate the  $L_{dn}$ . The model assumes that a train operating at night is as noticeable as 10 daytime trains. This noise penalty is based on standard noise analysis techniques.

On the Gibson City, Illinois to Fullerton, Illinois rail line segment, all of the trains would operate during the daytime. As a result, the detailed noise analysis shows that the actual 65 dBA  $L_{dn}$  contour is much closer to the tracks than indicated by the original analysis. SEA concludes that no receptors would experience noise levels above SEA's criterion for adverse noise effects on this segment.

SEA's initial noise analysis also did not account for the presence of the NS trackage rights trains on the Gilman, Illinois to Gibson City, Illinois rail line segment. The NS trackage rights trains result in a higher number of actual pre- and post-Acquisition trains on the rail line segment. After appropriately including these trains in the more detailed noise analysis of this segment, SEA determined that the projected noise increase would be less than 3 dBA  $L_{dn}$ . Therefore, no noise-sensitive receptors would experience noise increases above SEA's criterion for adverse noise effects on this segment.

Based on this more detailed analysis, the Acquisition-related increase in train traffic would not result in any noise-sensitive receptors on these two rail line segments experiencing a noise level of 65 dBA  $L_{dn}$  and an increase of at least 3 dBA  $L_{dn}$ . Table 4-44, "Detailed Noise Analysis Results," shows the revised analysis results, considering the more detailed information for these two rail line segments.

**TABLE 4-44**  
**DETAILED NOISE ANALYSIS RESULTS**

Line Segment	Number of Noise-sensitive Receptors within 65 dBA $L_{dn}$ Contour						Increase in $L_{dn}$		Noise-sensitive Receptors with Adverse Effects <sup>a</sup>	
	Pre-Acquisition		Post-Acquisition		Change					
	Wayside	Horn	Wayside	Horn	Wayside	Horn	Wayside	Horn	Wayside	Horn
Gibson City, IL to Fullerton, IL	0	3	0	15	0	12	0.8	0.4	0	0
Grimm, IL to Gibson City, IL	0	0	0	0	0	0	4.3	4.4	0	0

<sup>a</sup> Adverse effects include those receptors that would experience a post-Acquisition noise level of 65 dBA and an increase of at least 3 dBA  $L_{dn}$ .

**Rail Yards.** SEA identified no noise-sensitive receptors within the post-Acquisition 65 dBA  $L_{dn}$  noise contour. Because of the small number of rail cars per day that CN/IC would handle at the yard after the proposed Acquisition, SEA believes the switching activity to have an insignificant effect on noise levels at the yard. In addition, the mainline train traffic and the vehicular traffic on I-94, Griswold Road, and Michigan Road currently cause substantial noise at this location. Therefore, SEA projects no adverse noise effects resulting from the proposed CN/IC Acquisition.

**Intermodal Facilities.** Increased truck traffic on local streets is the major noise source related to increased activity and expanded operations at intermodal facilities. SEA calculated the effect of the 88-trucks-per-day increase they project for the Moyers/Chicago Gateway Intermodal Facility. Truck drivers currently enter and leave the facility by a number of routes, most of which are interstate highways or busy arterials. Of these possible routes, Route 1/Halsted Street has the lowest ADT, 16,600 to 17,800 vehicles per day. To make a conservative estimate of the effect of the additional truck traffic on overall noise levels, SEA assumed the following: (1) heavy trucks account for 8 percent of the total ADT volume, (2) all of the additional 88 trucks per day use Route 1, and (3) the change in  $L_{dn}$  is related to the percentage change in ADT, as discussed in Appendix G, "Noise Analysis Methods and Results."

Based on these assumptions, SEA estimated that the maximum increase in  $L_{dn}$  would be less than 0.3 dBA, which is an insignificant change. The post-Acquisition 65 dBA  $L_{dn}$  noise

contour would not change. SEA, therefore, concluded that the increased activity at the Moyers facility would have no adverse noise effects.

#### SEA's Conclusions

Based on the detailed noise analysis, SEA concludes that the proposed Acquisition would not result in significant adverse noise effects and mitigation is not warranted.

SEA further notes that noise-sensitive receptors that may experience an Acquisition-related increase in noise levels are in areas affected by horn noise. Near highway/rail at-grade crossings, horns on locomotives constitute the majority of noise generated by freight train operations. Unlike other potentially adverse environmental impacts, train horn noise is a deliberately created annoyance imposed to enhance and ensure safety. In past cases, the Board has refrained from mitigating noise caused by horns, stating that "any attempt to significantly reduce [train horn] noise levels at grade crossings would jeopardize safety, which we consider to be of paramount importance."<sup>40</sup> In short, reducing horn volume noise below certain levels can increase train-vehicle accidents. Similarly, shortening the duration of the horn sounding can result in similar negative impacts on safety.

SEA also notes that the FRA anticipates promulgating new rules about safe alternatives to horn noise in the near future. Recently passed Federal legislation, namely, the Swift Act (49 U.S.C. 20153), directs the Secretary of DOT to develop regulations relating to noise and rail safety measures. FRA is the Federal agency within DOT with primary responsibility for establishing train horn requirements and alternatives. These new rules would establish a community application process for FRA approval of alternatives to horn sounding, including establishing "quiet zones" for train horns. With FRA approval, communities could create a "quiet zone" for train horns by constructing other safety measures such as four-quadrant gates, directional horns, and median barriers that would provide an equivalent level of safety protection at a highway/rail at-grade crossing and allow the community to eliminate the train horn sounding. FRA anticipates issuing its notice of proposed rulemaking in late 1998 or early 1999. As indicated in previous cases, SEA believes that FRA's regulations will provide a safe, effective means to address horn noise concerns.

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<sup>40</sup> Surface Transportation Board, Section of Environmental Analysis. *Union Pacific Railroad—Conrail—Southern Pacific Railroad*, Decision No. 44, Finance Docket No. 32760, August 12, 1996.

## 4.13 ENVIRONMENTAL JUSTICE

SEA evaluated the potential effects of the proposed CN/IC Acquisition to ensure that minority and low-income populations (environmental justice populations) would not disproportionately bear potential high and adverse environmental and health effects.<sup>41</sup> To conduct its analysis, SEA compared the occurrence of environmental effects and the location of environmental justice populations for rail line activities that could meet or exceed the Board's thresholds for environmental analysis. To determine whether minority and low-income populations could disproportionately bear potential high and adverse effects, SEA's analysis measured the distribution of effects in three ways: system-wide, on a state level, and on a regional level. SEA determined that the proposed CN/IC Acquisition would cause no disproportionately high and adverse impacts on environmental justice populations on a system-wide or state-wide basis.

SEA conducted a detailed regional analysis in Illinois. SEA determined that no disproportionately high and adverse impacts for environmental justice populations would occur in the Chicago area (Cook County), Metropolitan Chicago, or Northern Illinois.

SEA determined that the proposed CN/IC Acquisition could result in a disproportionately high and adverse impact to environmental justice populations in the Southern Illinois region resulting from potentially significant increases in hazardous materials transportation on CN/IC rail line segments in the region. No other region had potentially significant environmental justice impacts. Specifically, SEA concludes that without mitigation the following rail line segments in the Southern Illinois region could experience potential significant hazardous materials transportation impacts as a result of the proposed CN/IC Acquisition:

- Edgewood, Illinois to Centralia, Illinois.
- Centralia, Illinois to Replakmine, Illinois.
- Replakmine, Illinois to Du Quoin, Illinois.
- Carbondale, Illinois to Cairo, Illinois.
- Cairo, Illinois to Fulton, Kentucky.

With its recommended mitigation, SEA concludes that these potential hazardous materials transport impacts would not be significant. However, SEA's recommended mitigation for hazardous materials transport would require the Applicants to comply with current Association of American Railroads guidelines for train and track safety, provide toll-free telephone numbers to local emergency response organizations, distribute their current hazardous materials emergency response plans to local emergency response organizations, work with local emergency response organizations to develop local hazardous materials emergency response plans, and provide emergency response drills or training to local emergency response committees (see Section 4.2, "Hazardous Materials Transport Safety," and Chapter 8, "SEA's Preliminary

<sup>41</sup> For this analysis, SEA defined environmental justice populations as a Census block group (or portion of a block group) where the percent of minority and low-income populations was at least 50 percent or at least 10 percentage points greater than that in the county where the Census block group is located.



Recommended Environmental Mitigation"). Additionally, SEA is recommending the following mitigation to address unique needs of affected environmental justice populations:

- Develop and implement a hazardous materials emergency response plan tailored to the special needs of minority and low-income populations.
- Provide Operation Respond software and any necessary training at the local emergency response center serving affected minority and low-income populations.
- Fund participation in a training session at AAR's Transportation Technology Center for two representatives of the local emergency planning organization serving affected low-income and minority populations.

SEA believes that implementing all the mitigation described above would address disproportionately high and adverse impacts on environmental justice populations in the Southern Illinois region.

### **Background**

Executive Order No. 12898, "Federal Actions to Address Environmental Justice in Minority and Low-Income Populations," directs individual Federal agencies to develop approaches that address environmental justice concerns in their programs, policies, and procedures. Although the Order does not require independent agencies such as the Board to conduct environmental justice analyses, SEA conducted an environmental justice analysis of the proposed CN/IC Acquisition because:

- The President requested that independent agencies comply with the Order, particularly during the National Environmental Policy Act (NEPA) process.
- The U.S. Department of Transportation Order, the Council on Environmental Quality guidance, and the U.S. Environmental Protection Agency guidance on environmental justice emphasize addressing environmental justice concerns in the NEPA context.
- The Board is responsible for ensuring that the proposed CN/IC Acquisition is consistent with the public interest.

The Executive Order directs Federal agencies to identify and address, as appropriate, disproportionately high and adverse impacts to minority and low-income populations (environmental justice populations) with respect to human health and the environment. In summary, the Order directs Federal agencies to conform to existing laws to ensure that their actions:

- Do not discriminate on the basis of race, color, or national origin.

- Identify and address disproportionately high and adverse health or environmental effects on minority and low-income populations.
- Provide opportunities for community input in the NEPA process, including input on potential effects and mitigation measures.

In the context of the proposed CN/IC Acquisition, SEA determined that the Executive Order, Federal agency guidance, and the public interest warrant addressing the following:

- Whether the proposed CN/IC Acquisition could have disproportionately high and adverse impacts on minority and low-income populations.
- Whether reasonable and feasible mitigation measures could eliminate or mitigate disproportionately high and adverse impacts, if they exist.
- Whether it is appropriate to modify recommended mitigation measures to meet the needs of a disproportionately affected minority or low-income populations.

SEA conducted additional outreach activities in those locations that could experience potential environmental justice impacts as a result of the proposed CN/IC Acquisition. Chapter 2, "Overview of Public Participation," describes SEA's general outreach effort and additional outreach to communities that could experience disproportionately high and adverse environmental and health effects on environmental justice populations.

**Board Thresholds  
for Analysis**

For the environmental justice analysis, SEA examined all potential railroad activities that could meet or exceed any Board threshold for environmental analysis. SEA evaluated 90 rail line segments, five rail yards, and one intermodal facility.

**Analysis Methods  
and Results**

Based on the method SEA developed in the recent Conrail Acquisition, SEA evaluated the potential environmental and health effects of the proposed CN/IC Acquisition on minority and low-income populations. In developing the method, SEA examined relevant documents from other Federal agencies, which included the following: (1) the President's Council on Environmental Quality, (2) U.S. Environmental Protection Agency, and (3) U.S. Department of Transportation.<sup>42</sup>

SEA's six-step method, and the result of each step, is summarized below:

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<sup>42</sup> For a complete description of the methods used in the environmental justice evaluation, see Appendix L, "Environmental Justice Analysis Methods Results."

### Step 1. Identify Potential Effects

Using the Board's thresholds for environmental analysis, SEA identified CN/IC-related rail activities that have the potential to cause a broad range of potential environmental and human health effects that could result from the proposed CN/IC Acquisition, including effects on safety, traffic, air quality, noise, and hazardous materials transport. As described in Chapter 3, "Project Description," SEA identified 90 rail line segments, five rail yards, and one intermodal facility that could meet or exceed any of the Board's thresholds for environmental analysis. SEA determined that potential environmental impacts on other rail line segments or at other rail facilities would not be significant and did not warrant further environmental justice analysis.

### Step 2. Identify Potential Effects on Environmental Justice Populations

To determine whether these potential effects could occur in areas with minority or low-income populations, SEA identified the geographic areas over which potential effects could occur (i.e., areas of potential effects) and the demographic characteristics of the population in each area. SEA defined environmental justice populations as a Census block group (or a portion of a Census block group<sup>43</sup>) where the percent of minority or low-income residents was at least 50 percent or at least 10 percentage points greater than that in the county where the Census block group is located. Attachment L-1, "Data on Potentially Affected Populations in SEA's Environmental Justice Evaluation," in Appendix L, "Environmental Justice Methods and Analysis," provides detailed demographic and income information for each area of potential effects that SEA examined.

Based on this analysis, SEA identified 22 rail line segments and five rail yards and intermodal facilities in the states of Illinois, Kentucky, and Michigan as rail activities that could meet or exceed the Board's thresholds for environmental analysis and have environmental justice populations within the areas of potential effect.

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<sup>43</sup> Where only a portion of a Census block group lay within the area of potential effects, SEA treated that portion as a separate block group, scaling the demographic data for that block group in proportion to the share of the geographic area located within the area of potential effects.

**Step 3. Assess Whether Potential Effects on Environmental Justice Populations Could be High and Adverse**

To identify potentially high and adverse impacts, SEA reviewed the analysis results of each environmental issue area to determine which impacts could be significant using SEA's criteria of significance. Based on its analysis of potential environmental impacts of the proposed CN/IC Acquisition, SEA identified one environmental issue area that could result in significant impacts, hazardous materials transport safety. Table 4-45, "Potential Significant Environmental Impacts of the CN/IC Acquisition," lists the rail line activities where potential significant impacts could affect environmental justice populations. Chapter 4, "Environmental Consequences—Operational Changes," Sections 4.1 through 4.12 document the results of SEA's analysis.

SEA also contacted local planning departments and metropolitan planning organizations along these rail line segments to identify any local projects in the vicinity of the rail line segments that could result in potential cumulative environmental effects when considered with the proposed CN/IC Acquisition. SEA identified several local development projects in the vicinity of the rail line segments and concludes that these projects would not contribute to cumulative local environmental effects on environmental justice populations when considered with the CN/IC Acquisition. Chapter 6, "Environmental Consequences—Cumulative Effects," Section 6.4, "Other Projects in Environmental Justice Communities," discusses this conclusion in detail.

SEA determined that potential environmental impacts on other rail line segments or at other rail facilities would not be significant and did not warrant further environmental justice analysis. Based on the results of its analysis of high and adverse impacts, SEA's disproportionality analysis (Step 4) focused on hazardous materials transport.

**TABLE 4-45**  
**POTENTIAL SIGNIFICANT ENVIRONMENTAL IMPACTS**  
**OF THE CN/IC ACQUISITION**

Rail Line Segment		Potential Significant Impact
Between	And	
Mattoon, IL	Kankakee, IL	Hazardous materials transport
Kankakee, IL	Otto, IL	Hazardous materials transport
Otto, IL	Gilman, IL	Hazardous materials transport
Gilman, IL	Champaign, IL	Hazardous materials transport
Champaign, IL	Mattoon, IL	Hazardous materials transport
Edgewood, IL	Centralia, IL	Hazardous materials transport
Centralia, IL	Renlakhine, IL	Hazardous materials transport
Renlakhine, IL	Du Quoin, IL	Hazardous materials transport
Carbondale, IL	Cairo, IL	Hazardous materials transport
Cairo, IL	Fulton, KY	Hazardous materials transport

#### Step 4. Determine Disproportionality

SEA defined effects to be disproportionate in areas with minority or low-income populations if the effects would be predominately borne, more severe, or greater in magnitude than other areas. To determine whether potentially high and adverse effects could disproportionately affect minority and low-income populations in the absence of mitigation measures, SEA used statistical techniques to compare impacts on environmental justice populations to those on other populations on a system-wide, state, and regional basis.

Based on the methods used for the Conrail Acquisition, SEA ranked the potential effect of hazardous materials transport (the issue area identified in Step 3) on a scale from zero to six in each Census block group affected by the proposed CN/IC Acquisition. These rankings constitute Environmental Resource Scores (ERS). SEA evaluated potential effects with an ERS equal to or greater than 3.5 for potential disproportionality. SEA used statistical techniques, known as chi-squared and ratio-of-means tests, to determine whether an ERS equal to or greater than 3.5 could occur

more frequently among environmental justice populations than among other populations potentially affected by the proposed CN/IC Acquisition. To identify those states and regions warranting state-level and regional disproportionality analysis, SEA calculated Multiple Resource Scores (MRS) for each potentially affected population within the CN/IC system. A population's MRS equals the sum of the squares of each issue area (i.e., hazardous materials transport) ERS for that population. SEA determined that state-level and regional disproportionality analysis was warranted in those states where the MRS for any potentially affected population exceeded a value of 24.

SEA determined that only in the State of Illinois would the MRS exceed 24. Because the MRS for Illinois exceeded 24, SEA identified four distinct regions in Illinois for closer analysis to assess whether the potential effects would be disproportionately high and adverse on the regional level:

- Chicago (Cook County).
- Chicago Metropolitan Region (DeKalb, DuPage, Kane, and Will counties).
- Northern Illinois (Boone, Champaign, Coles, De Witt, Douglass, Ford, Iroquois, Jo Davies, Kankakee, Logan, McLean, Macon, Stephenson, Tazewell, and Winnebago counties).
- Southern Illinois (Alexander, Clay, Cumberland, Effingham, Fayette, Franklin, Jackson, Jasper, Jefferson, Johnson, Marion, Massac, Montgomery, Moultrie, Perry, Pope, Pulaski, Randolph, St. Clair, Saline, Sangamon, Shelby, Union, Washington, and Williamson counties).

SEA used the same statistical techniques for the system-wide, state, and regional evaluations to determine disproportionality. At each level, SEA compared the potential effects on environmental justice populations to the potential effects on other affected populations.

**System-wide Analysis Results** — Table 4-46, "Results of Disproportionate Impacts Analysis for Hazardous Materials Transport," displays the results of the chi-squared and ratio of means tests for the system-wide analysis. The ratio of means test resulted in a score of less than one. The ratio of means test result

of less than one indicated that hazardous materials transport ERS equal to or greater than 3.5 would not occur more frequently among environmental justice populations than among other populations potentially affected by the proposed CN/IC Acquisition. The chi-squared test resulted in a confidence level above 90 percent, indicating that the statistical confidence of this conclusion was high.

**TABLE 4-46**  
**RESULTS OF DISPROPORTIONATE IMPACTS ANALYSIS FOR**  
**HAZARDOUS MATERIALS TRANSPORT**

Analysis Area	Statistical Confidence of Chi-squared Result (Zero to 100 Percent)	Ratio of Means Result	Disproportionate Potential High and Adverse Impact on Minority or Low-income Population?
<b>System-wide Analysis</b>			
System-wide	99.9999	0.68	No
<b>State Analysis</b>			
Illinois	90.3	0.869	No
<b>Regional Analysis</b>			
Chicago (Cook County)	99.75	0.38	No
Chicago Metropolitan	63	0.50	No
Northern Illinois	78	0.91	No
Southern Illinois	98	1.37	Yes

**State Analysis Results** — SEA determined that only in the state of Illinois did the MRS for any potentially affected population exceed 24. In all cases, the MRS above 24 was the result of potential hazardous materials transport impacts. Because SEA determined areas of potential effects within the State of Illinois had an MRS greater than 24, they concluded that state-level and regional statistical analysis was needed to evaluate potential disproportionately high and adverse hazardous materials transport impacts on minority and low-income populations in Illinois. SEA then applied the ratio of means test and the chi-squared test to determine whether an ERS equal to or greater than 3.5 could occur more frequently among environmental justice populations than among other populations potentially affected by the proposed CN/IC Acquisition on a state-level basis. Table 4-46, “Results of

**Disproportionate Impacts Analysis for Hazardous Materials Transport,** displays the results of the ratio of means test and the chi-squared test conducted at the state level.

The ratio of means test resulted in a score of less than one, indicating that, on a state-wide basis, low-income and minority populations in Illinois would not be more likely to experience potential high and adverse hazardous materials transport impacts than other potentially affected populations in Illinois. The chi-squared test resulted in a confidence level above 90 percent, indicating that the statistical confidence of this conclusion was high.

**Regional Analysis Results** — The ratio of means test resulted in a score of less than one in Cook County, metropolitan Chicago, and Northern Illinois, indicating that low-income and minority populations in each of these three regions would not be more likely to experience hazardous materials transport ERSs equal to or greater than 3.5 than other potentially affected populations in each region. The chi-squared test for Cook County resulted in a confidence level above 90 percent, indicating that the statistical confidence of this conclusion was high. The chi-squared test for the Northern Illinois and metropolitan Chicago regions resulted in a confidence level of 78 and 63 percent, respectively. These levels of confidence also indicate a high level of confidence in the statistical analysis results.

In the Southern Illinois region, the chi-squared and ratio of means results indicate that hazardous materials transport ERS equal to or greater than 3.5 could occur more frequently among environmental justice populations than among other populations potentially affected by the proposed CN/IC Acquisition in this region. The chi-squared test resulted in a confidence level of 98 percent, indicating a high level of statistical confidence in this conclusion. Table 4-46, "Results of Disproportionate Impacts Analysis for Hazardous Materials Transport," displays the results of the regional analysis.

#### **Step 5. Conduct Extended Outreach to Potentially Affected Environmental Justice Populations**

To ensure that environmental justice populations had every possible opportunity to participate in the decision-making process for the proposed CN/IC Acquisition, SEA conducted special outreach and notification activities in communities with identified environmental justice populations. Shortly after the Applicants



filed their application, SEA notified all communities with environmental justice populations adjacent to railroad activities that met any of the Board's thresholds for environmental analysis. SEA provided information about the proposed CN/IC Acquisition and the environmental review process to 35 communities in Illinois, Kentucky, and Michigan.

SEA determined that 13 of these 35 communities adjacent to the rail activities that met Board thresholds for environmental analysis could experience potential high and adverse impacts on environmental justice populations. SEA expanded its notification when the Draft EA was available in these 13 communities to ensure that potentially affected environmental justice populations were provided the opportunity to review and comment on this Draft EA and SEA's preliminary recommended mitigation. For these 13 communities, SEA announced the availability of the Draft EA and the opportunity for public participation and comment by placing ads in local newspapers, submitting public service announcements to local radio stations, and sending written notification to local government officials and community organizations. See Chapter 2, "Overview of Public Participation," for additional descriptions of the outreach SEA conducted for environmental justice populations.

#### **Step 6. Evaluate Mitigation Measures**

For those five communities where SEA determined that in the absence of mitigation disproportionately high and adverse impacts could occur on minority or low-income populations, SEA reviewed potential mitigation measures to determine whether additional or modified mitigation could eliminate or reduce disproportionately high and adverse impacts or would address unique needs of the minority and low-income populations.

SEA believes that, with its recommended mitigation for hazardous materials transport, the proposed CN/IC Acquisition would not result in any significant adverse effects for any of the identified populations affected. Additionally, SEA is recommending mitigation that would tailor the mitigation to unique needs of the environmental justice populations and provide additional training to local emergency planning personnel. Accordingly, SEA is recommending that the Board require the Applicants to provide additional emergency response resources and training as described below. Chapter 8, "SEA's Preliminary Recommended

Environmental Mitigation," includes the complete list of SEA's preliminary recommended mitigation.

#### **SEA's Conclusions**

**System-wide.** SEA concludes that the proposed CN/IC Acquisition would not result in disproportionately high and adverse impacts on minority or low-income populations on a system-wide basis and that additional system-wide mitigation measures to address environmental justice are not warranted.

**State.** SEA concludes that the proposed CN/IC Acquisition would not result in disproportionately high and adverse impacts on minority or low-income populations on a state-wide basis and that additional state-wide mitigation measures to address environmental justice are not warranted.

**Regional.** SEA concludes that the proposed Acquisition would not result in disproportionately high and adverse impacts on environmental justice populations on a regional basis in any state other than Illinois. SEA concludes that within Illinois, the proposed CN/IC Acquisition would not result in disproportionately high and adverse impacts on minority or low-income populations in Illinois in Cook County, metropolitan Chicago, or Northern Illinois on a regional basis. SEA concludes that with its recommended mitigation the proposed CN/IC Acquisition would not result in a disproportionate hazardous materials transport impact to environmental justice populations in the Southern Illinois region.

The rail line segments in the Southern Illinois region where SEA determined that without mitigation potential significant hazardous materials transportation impacts could result from the CN/IC Acquisition include the following:

- Edgewood, Illinois to Centralia, Illinois.
- Centralia, Illinois to Rentakmine, Illinois.
- Rentakmine, Illinois to Du Quoin, Illinois.
- Carbondale, Illinois to Cairo, Illinois.
- Cairo, Illinois to Fulton, Kentucky.

Table 4-47, "Environmental Justice Populations Affected by Potential Significant Impacts in Southern Illinois," shows the location of minority and low-income populations affected by potential hazardous materials transport impacts on these segments in Southern Illinois.

**TABLE 4-47**  
**ENVIRONMENTAL JUSTICE POPULATIONS AFFECTED BY POTENTIAL**  
**SIGNIFICANT IMPACTS IN SOUTHERN ILLINOIS**

Rail Line Segment		Potential Significant Impact	Location of Potentially Affected Environmental Justice Populations	
Between	And		County	City or Town
Edgewood, IL	Centralia, IL	Hazardous materials transport	Marion	Centralia
Centralia, IL	Renlakhine, IL	Hazardous materials transport	Marion	Centralia
Renlakhine, IL	Du Quoin, IL	Hazardous materials transport	Perry	Du Quoin
Carbondale, IL	Calro, IL	Hazardous materials transport	Alexander	Cairo
Carbondale, IL	Cairo, IL	Hazardous materials transport	Jackson	Carbondale
Carbondale, IL	Cairo, IL	Hazardous materials transport	Pulaski	Mounds
Cairo, IL	Fulton, KY	Hazardous materials transport	Alexander	Cairo

In addition to the recommended mitigation for the hazardous materials transport impacts (see Section 4.2, "Hazardous Materials Transport Safety"), SEA's preliminary recommended mitigation for these effects on environmental justice populations in the communities listed above would require the Applicants to:

- Develop and implement a Hazardous Materials Emergency Response Plan tailored to account for unique needs of the affected minority and low-income populations.
- Provide Operation Respond software and any necessary training at the local emergency response center serving the affected minority and low-income populations.
- Fund participation in a training session at AAR's Transportation Technology Center for two representatives of the local emergency planning organization serving the affected low-income and minority populations.

With that tailored mitigation and the mitigation described in Section 4.2, "Hazardous Materials Transport Safety," SEA concludes that the proposed CN/IC Acquisition would not result in any disproportionately high and adverse impacts on minority or low-income populations.

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## **CHAPTER 5**

### **ENVIRONMENTAL CONSEQUENCES—CONSTRUCTION PROJECTS**

The Applicants for the proposed Canadian National/Illinois Central (CN/IC) Acquisition have submitted an Operating Plan, which announces their intention to construct a new rail line connection, make improvements at several rail yards, and enhance a number of existing automotive and intermodal facilities if the proposed CN/IC Acquisition is approved by the Board. The Operating Plan describes these proposed construction projects in further detail.<sup>44</sup> Although these activities would not usually require Board review, the Board's Section of Environmental Analysis (SEA) included the proposed construction projects in its environmental review because these projects would not occur except for the proposed CN/IC Acquisition. SEA completed a preliminary qualitative assessment of each of the Applicants' proposed projects to determine its potential to individually or cumulatively affect the environment beyond the existing right-of-way and to determine whether the proposed activity warranted detailed environmental review.

Following its analysis, SEA determined that all but two of the proposed projects, the construction of a rail line connection in Cicero, Illinois and the construction of a proposed bypass track around Jackson Yard in Jackson, Mississippi, were routine actions that would cause only minimal or temporary environmental effects. SEA determined that if the Applicants' implemented their Best Management Practices during these routine actions, the practices would address any potential for significant environmental effects beyond the existing right-of-way. Therefore, SEA concluded that only the proposed projects in Cicero, Illinois and Jackson, Mississippi would require further environmental review.

SEA conducted its evaluation of the proposed construction projects that could cause significant environmental effects in accordance with the National Environmental Protection Act (NEPA). It referred to data that the Applicants submitted in their Preliminary Draft Environmental Assessment (PDEA). SEA reviewed the Applicants' approved analytical methods and verified their analysis and conclusions. In cases where SEA did not concur with the Applicants' approach, SEA either directed them to modify their analysis methods or conducted its own independent analysis. SEA also developed the preliminary environmental mitigation measures set out in the Draft Environmental Assessment (Draft EA). Section 5.2, "Summaries of Environmental Issues Analysis and Conclusions—Construction Projects," provides a summary of SEA's analysis to determine the potential environmental effects of the proposed construction projects in Cicero, Illinois and Jackson, Mississippi. Appendix B through Appendix M present

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<sup>44</sup> Canadian National Railway Company, et al., *Railroad Control Application*, Vol. 2, Surface Transportation Board, Finance Docket No. 33556, July 1998.

information on the methods SEA used to conduct its environmental analysis pertaining to the proposed construction activities.

## **5.1 DESCRIPTION OF PROPOSED CONSTRUCTION PROJECTS**

### **5.1.1 Cicero, Illinois**

The Applicants propose to construct a rail line connection in the Town of Cicero, Cook County, Illinois to facilitate movement of their trains to Markham Yard in Harvey, Illinois and Clearing Yard in Bedford Park, Illinois. The proposed connection would provide a more direct route to Markham Yard and Clearing Yard and allow trains to carry double-stacked intermodal freight.

Cicero is a southwestern suburb of Chicago, Illinois. The Applicants propose to construct a rail line connection in the southwestern quadrant of the IC-BRC intersection. The proposed connection would be approximately 1,000 feet long. The proposed connection would enable trains arriving from the west to use BRC's rail line to travel to either Markham Yard or Clearing Yard and would permit traffic from the east to flow from those yards over the same routes to the west. This connection would allow trains to bypass existing congestion and delays that occur in the Chicago terminal area. The Applicants estimated that an average of three freight trains per day would operate over the new connection. Figure 5-1, "Proposed Rail Line Connection Site Location at Cicero, Illinois," illustrates the vicinity of the proposed connection; and Figure 5-2, "Proposed Rail Line Connection, Cicero, Illinois," presents a sketch of the proposed connection.

#### **5.1.1.1 Alternatives to Cicero Construction**

The Applicants considered several alternatives to their proposed construction projects at Cicero, Illinois and Jackson, Mississippi, including a "no-action" alternative. Under the no-action alternative, current CN and IC rail operations would continue, and the Applicants would not realize the operating efficiencies that would result from the proposed rail line connection.

For Cicero, Illinois, the Applicants considered two alternative connections. Under either alternative, CN/IC trains from the west would enter Markham Yard. For both alternatives, CN/IC trains would travel on the Chicago, Central and Pacific (CCP) rail line to the EJ&E rail line at Manger, Illinois, which would require a new connection, and proceed south and east to the intersection of the IC and EJ&E rail lines in Matteson, Illinois. Figure 5-3, "Alternative Rail Line Connection, Rail Line Route to Markham Yard via Cicero or Matteson, Illinois Connection," depicts the vicinity of each alternative; and Figure 5-4, "Build Alternatives, Rail Line Connections, Matteson, Illinois," shows the configuration of each alternative. Although the specific impacts associated with both build alternatives vary, neither was preferable to the Applicants' proposed connection for several reasons. Both connections would be longer<sup>45</sup> than the proposed alternative; incur substantially greater expense (\$9 million or more); create potential impacts to a nearby wetland; and produce additional disturbances to nearby businesses, roads, and residential areas.

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<sup>45</sup> One connection alternative would be nearly 2,000 feet long, the other would be over 4,000 feet long.



Dealt Environmental Assessment

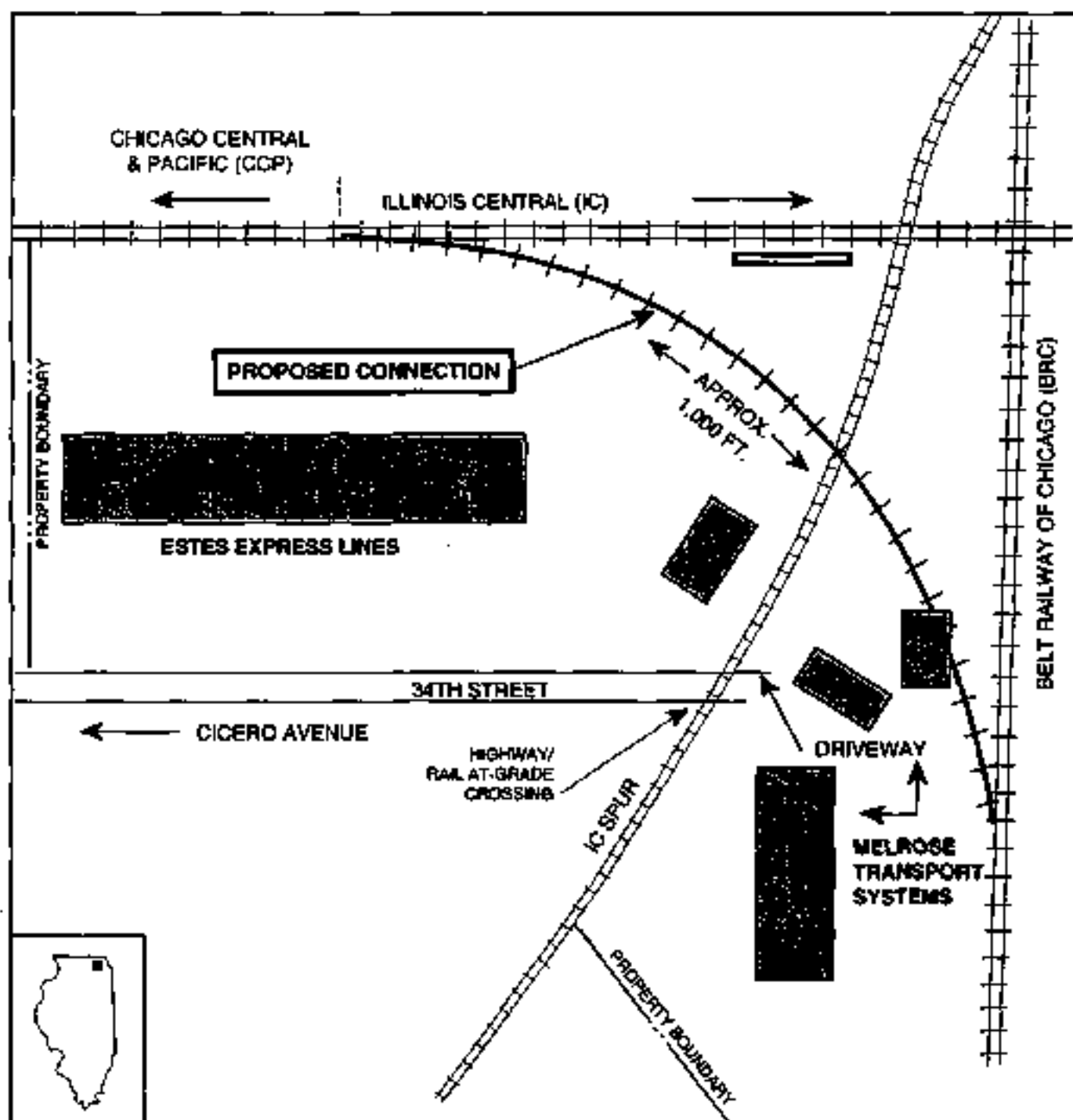
Figure 5-1  
Proposed Rail Line Connection Site  
Location at Cicero, Illinois

Proposed Acquisition  
Canadian National and Illinois Central



SOURCE: U.S.G.S. 7.5 Minute Topographic Map  
ENGLEWOOD, ILL. 1918 Quadangle 1913 and  
BERRYMAN, ILLINOIS Quadangle 1913

0 500 1000  
SCALE IN FEET



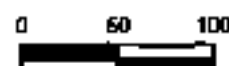


Draft Environmental Assessment

-  Building to be demolished
-  Wetland

**Figure 5-2**  
Proposed Rail Line Connection,  
Cicero, Illinois

Proposed Acquisition  
Canadian National and Illinois Central

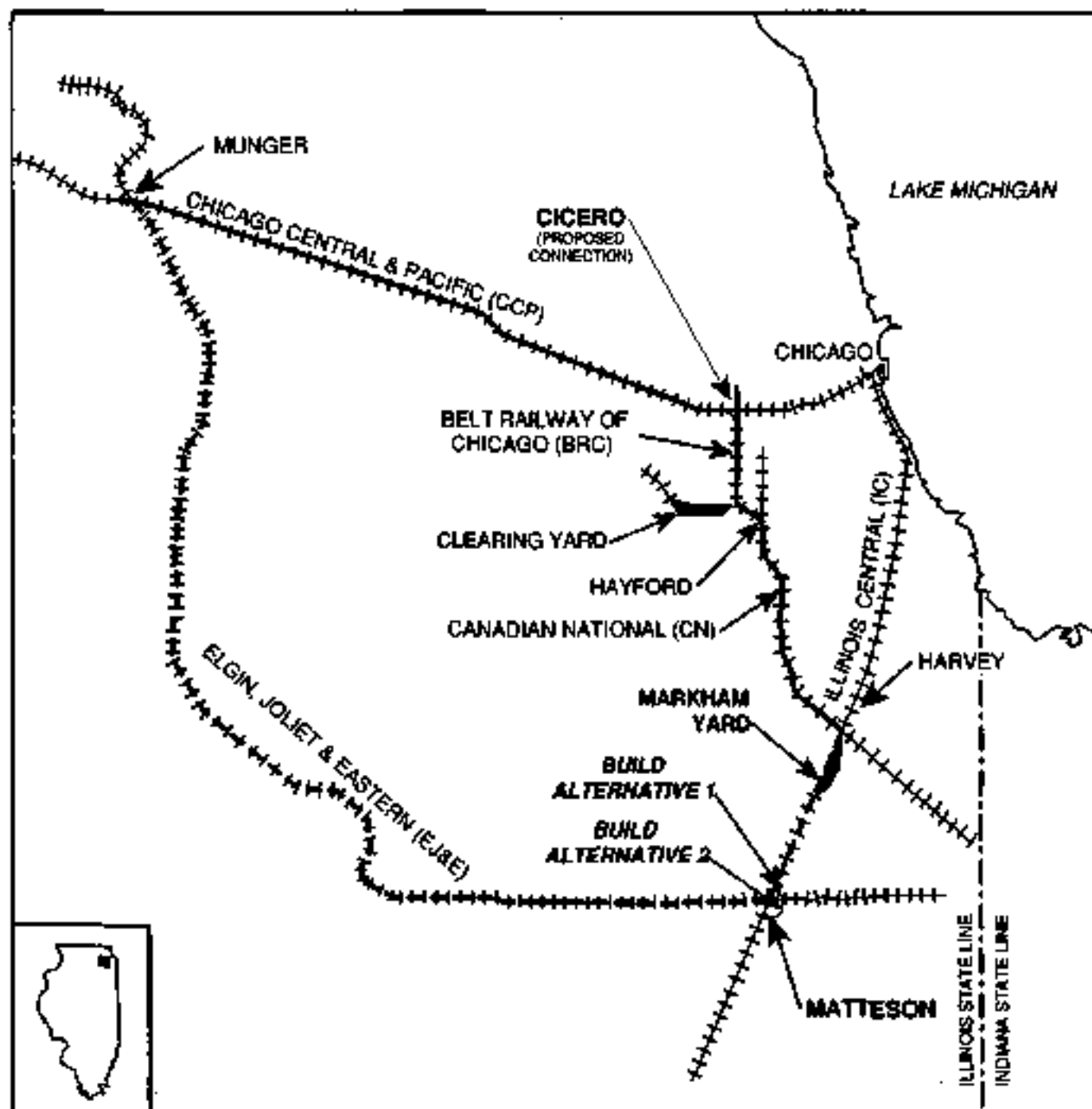


APPROXIMATE SCALE IN FEET



Source: Golder Associates, Inc. Phase I Environmental Site Assessment  
Prepared for Canadian National Railroad, August 1998





Draft Environmental Assessment

- +++++ Preferred Route
- ++-+- Alternative Route
- ++++ Existing Track
- ..... Water

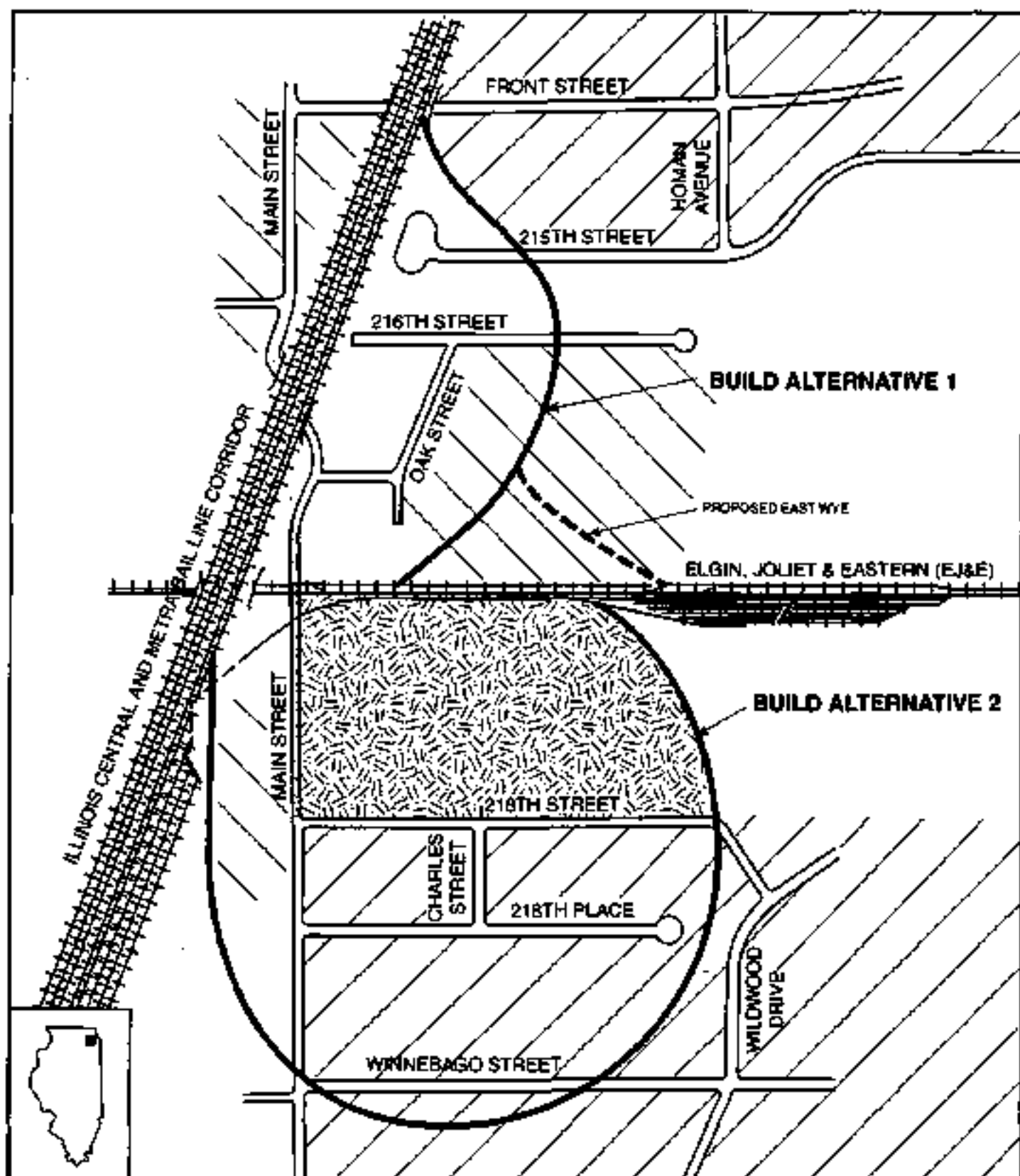
Source: Railroad Atlas of North America -  
Great Lakes West, Kent, UK: Steam Powered Publishing, 1995.

**Figure 5-3**  
**Alternative Rail Line Connection**  
**Rail Line Route to Markham Yard Via**  
**Cicero and Matteson, Illinois**

Proposed Acquisition  
Canadian National and Illinois Central



NOT TO SCALE



Draft Environmental Assessment

Proposed Acquisition  
Canadian National and Illinois Central

Figure 5-4  
Build Alternatives, Rail Line Connections,  
Matteson, Illinois

Source: Canadian National Railroad, draft preliminary design, July, 1998.

APPROXIMATE SCALE IN FEET

### 5.1.2 Jackson, Mississippi

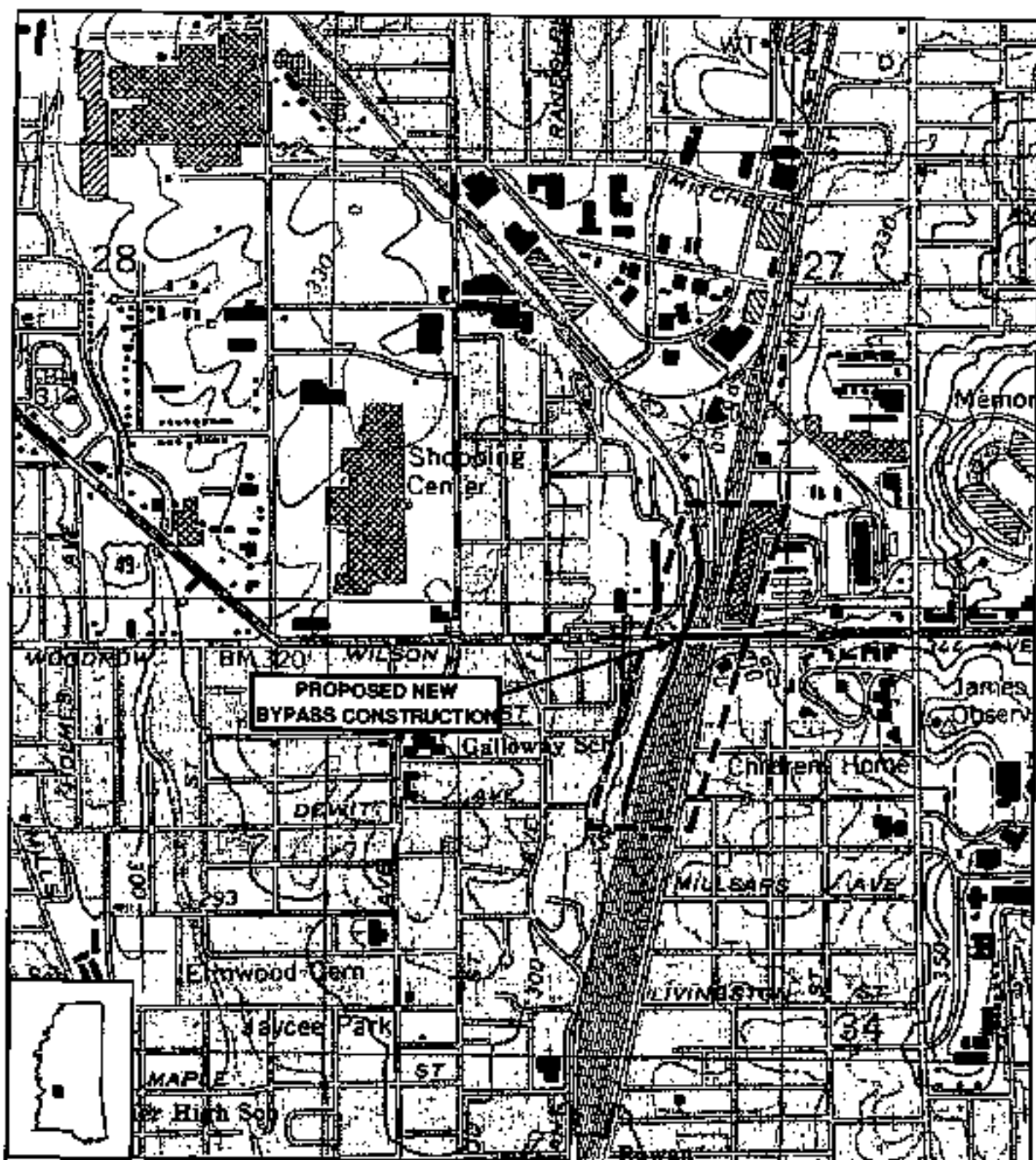
The Applicants propose to construct a rail yard bypass in the City of Jackson, Hinds County, Mississippi, which would allow northbound and southbound trains on the IC rail line to bypass Jackson Yard. Figure 5-5, "Proposed Bypass Construction Area - Jackson Yard, Jackson, Mississippi," illustrates the vicinity of the proposed bypass. Located in the City of Jackson, Jackson Yard is a key interchange point for CN/IC and The Kansas City Southern Railway Company (KCSR) trains. (Refer to Figure 5-6, "Illinois Central & Kansas City Southern Rail Lines near Jackson, Mississippi.")

To facilitate the movement of trains that operate on the IC and KCSR rail lines, the proposed bypass would be approximately 2.38 miles (12,566 feet) long, extending from the east side of Livingston Road (on the northwestern side of the rail yard) to the north side of Monument Street (at the southern end of the rail yard). Approximately 1.98 miles (10,426 feet) of the proposed bypass would consist of two sections of existing track on the west side of the rail yard; the Applicants would construct 0.40 mile (2,140 feet) of new track to join these existing sections. The Applicants would locate the new track on the west side of the rail yard, allowing trains to avoid travel through the yard. The new track would extend approximately 800 feet north and 1,200 feet south of the Woodrow Wilson Avenue overpass. Figure 5-7, "Proposed Bypass at Jackson Yard, Jackson, Mississippi," depicts the Applicants' proposed project.

The proposed bypass is part of a series of changes that the Applicants have planned to create an efficient, reliable automotive service corridor in cooperation with KCSR and other carriers along the IC rail lines. Figure 5-8, "Proposed Automotive Service Corridor," presents the Applicants' proposed north-south corridor. The Applicants estimated that an average of three trains per day would operate over the new bypass, which would cost approximately \$1 million.

#### 5.1.2.1 Alternatives to Jackson Construction

The Applicants considered an alternative to the proposed project in Jackson, Mississippi and they considered the no-action alternative. Under the no-action alternative, current CN and IC rail operations would continue, but the Applicants would not realize the operating efficiencies that would result from the proposed rail yard bypass. The alternative route would bypass Jackson Yard around its east side and require construction along the east side of Jackson Yard and west of Mill Street. The alternative bypass would be approximately 2 miles long, extending from the east side of the intersection of Livingston Road and the IC rail line (northwest of Jackson Yard) to Fortification Street (at the south end of Jackson Yard). Most of the alternative bypass construction could occur within the existing right-of-way or on property that the Applicants already own.



Draft Environmental Assessment



Construction  
Boundary

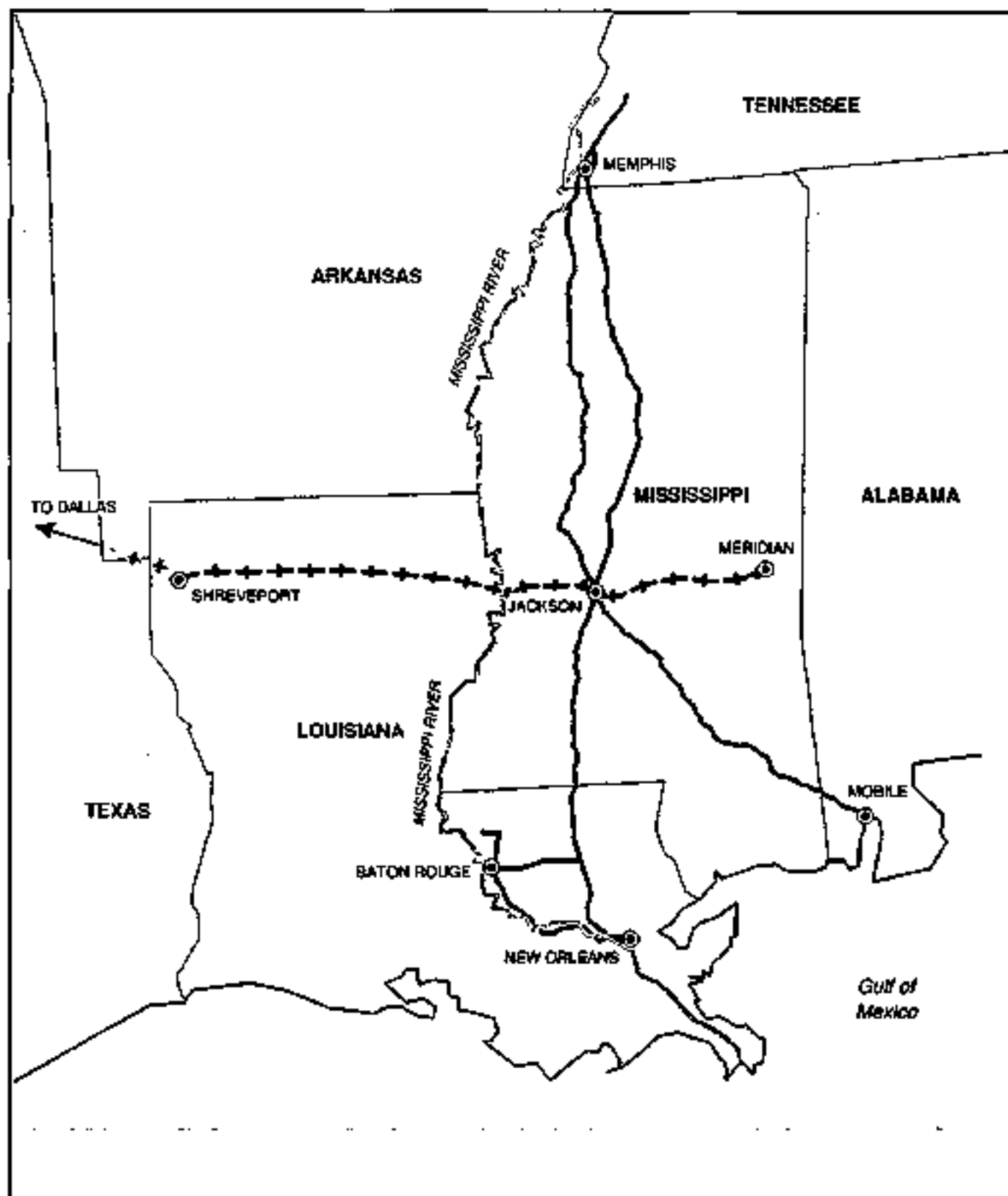
Figure 5-5  
Proposed Bypass Construction Area - Jackson Yard  
Jackson, Mississippi

Proposed Acquisition  
Canadian National and Illinois Central

Source: USGS 7.5 Minute Topographic  
Map, Jackson, Mississippi Quadrangle 1960

0 500 1000  
SCALE IN FEET





Draft Environmental Assessment

① City

— Illinois Central Rail Lines

— Kansas City Southern Rail Lines

... Water

Source: Illinois Central System Map.

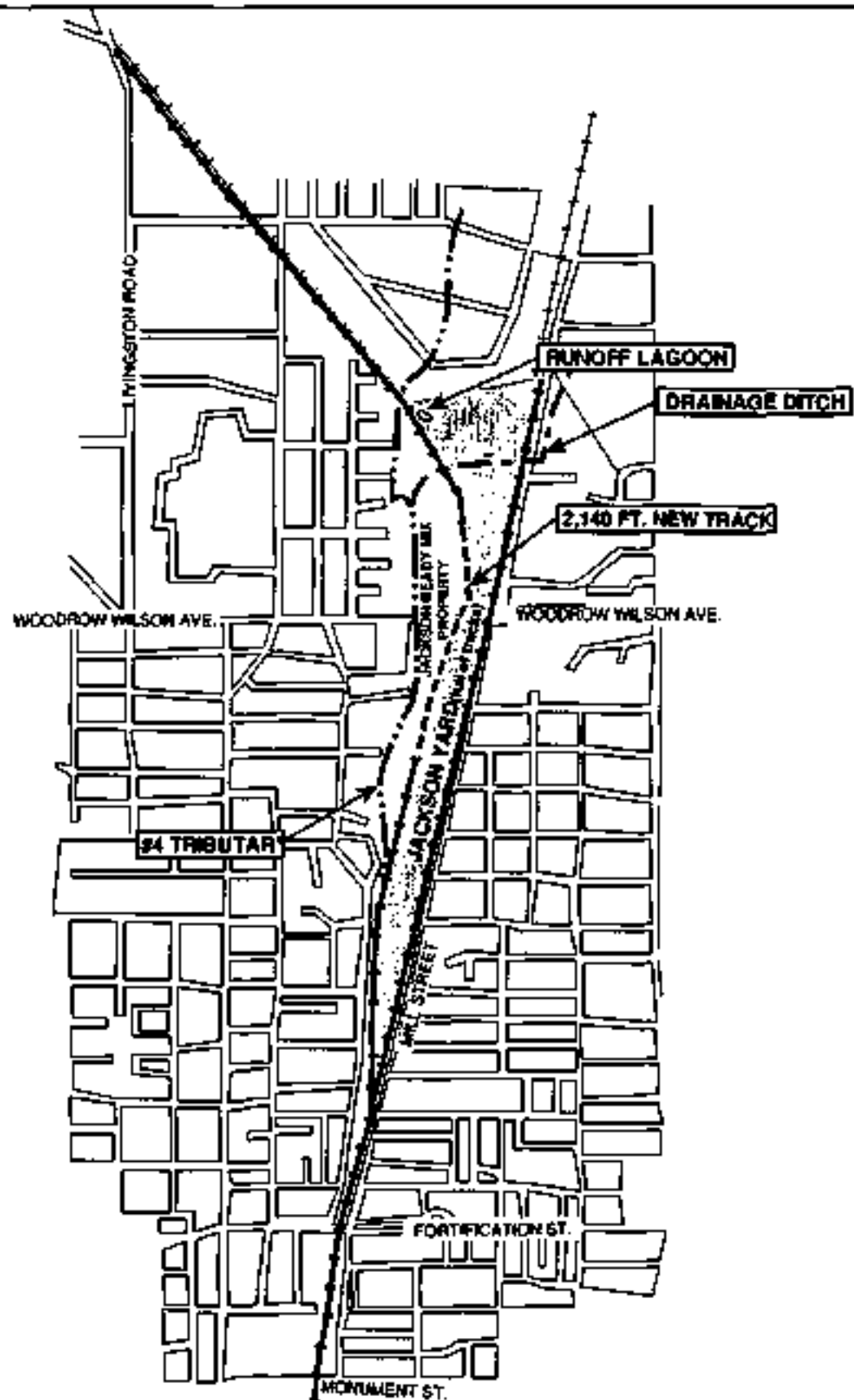
**Figure 5-6**  
**Illinois Central & Kansas City**  
**Southern Rail Lines**  
**Near Jackson, Mississippi**

Proposed Acquisition  
 Canadian National and Illinois Central

0 35 70

APPROXIMATE SCALE IN MILES





Draft Environmental Assessment

- +++++ EXISTING TRACK
- +++++ PROPOSED BYPASS ROUTE (2.31 MILES)
- PROPOSED TRACK TO BE CONSTRUCTED (2.40 MILES)
- 34 TRIBUTARY

Source: Illinois Central Railroad, Preliminary design, July 1998.

Figure 5-7  
Proposed Bypass at Jackson Yard  
Jackson, Mississippi

Proposed Acquisition  
Canadian National and Illinois Central

0 650 1300

APPROXIMATE SCALE IN FEET





SEA determined that the build alternative is not environmentally preferable to the Applicants' proposed bypass at Jackson Yard for several reasons. For example, the alternative would require 2.0 miles of new track instead of 0.4 mile; and it would require the Applicants to acquire additional property, construct one new pedestrian bridge, install signals at five locations, and reroute drainage.

## **6.2 SUMMARIES OF ENVIRONMENTAL ISSUES ANALYSIS AND CONCLUSIONS — CONSTRUCTION PROJECTS**

### **5.2.1 Hazardous Materials Spill Sites and Hazardous Waste Sites**

SEA evaluated the potential effects of the proposed construction projects on hazardous materials spill sites and hazardous waste sites within 500 feet of the proposed construction activity.<sup>46</sup> SEA did not evaluate the potential effects of hazardous materials spills and waste sites that resulted from operational changes because such changes would not alter the physical environment. Appendix I, "Hazardous Materials Spill Sites and Hazardous Waste Sites Analysis Methods and Results," presents SEA's methods for evaluating the potential effects of construction activities.

SEA considered the effects of construction activities on hazardous materials spill sites and hazardous waste sites to be significant if one of the following conditions would occur:

- The construction activities would create a threat to human health or the environment by disturbing sites containing hazardous materials.
- The construction activities would disturb sites where other parties had contained contaminants in place to reduce the possibility of threats to human health or the environment (e.g., covered contaminants with a clay, soil, or asphalt cap).

#### **5.2.1.1 Cicero, Illinois**

SEA reviewed information from the Applicants' PDEA and various databases to identify potential hazardous waste sites or materials that the proposed construction could affect. (See Appendix I, "Hazardous Materials Spill Sites and Hazardous Waste Sites Analysis methods and Results," Section I.4, "Data Sources.") SEA contacted the Cicero Fire Department to obtain records of any emergency responses that related to hazardous materials spills at or near the area of the proposed connection. The Cicero Fire Department advised that no emergency responses to sites within 500 feet of the proposed connection have been reported.<sup>47</sup>

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<sup>46</sup> Environmental assessments prepared for several proposed rail line connections relating to the acquisition of Conrail by CSX and NS evaluated effects of hazardous materials and waste sites within 500 feet of the proposed rail line connections. For example, see: Section of Environmental Analysis, *Environmental Assessment, Greenwich, CSX/Conrail Rail Line Connections—Village of Greenwich, Huron County, Ohio*, Decision No. 2833, October 7, 1997.

<sup>47</sup> Cicero Fire Department, Cicero, Illinois. Telephone conversation with Chief Jerry Chalada, July 16, 1998.



The Applicants would acquire two properties, the Estes property and the Melrose property, to construct the proposed alternative. During its review of environmental database information, SEA identified the Estes property and the following two off-site properties of environmental concern within 500 feet of the proposed rail line connection:

- **Brightly Galvanized Products**, 3330 South Cicero Avenue, is a large-quantity generator of hazardous waste regulated under the Resource Conservation and Recovery Act (RCRA).<sup>48</sup> SEA reviewed Illinois Environmental Protection Agency (IEPA) records that indicate Brightly Galvanized Products generates spent pickle liquor from its metal galvanizing process. Envirite Corporation in Harvey, Illinois transports this waste off site within 90 days.<sup>49</sup>
- **Turks Motor Express**, 3333 South Cicero Avenue, appears is listed as a leaking underground storage tank (LUST) site with contamination from diesel fuel and waste oils. SEA reviewed IEPA information that indicates three underground storage tanks (USTs) and contaminated soil surrounding the UST basin were removed on September 26, 1997.<sup>50</sup> Groundwater samples from on-site monitoring wells did not indicate groundwater contamination. The site must undergo further remediation before IEPA will grant closure.<sup>51</sup>

SEA concludes that the proposed construction activities would not disturb hazardous materials at either the Turks Motor Express property or the Brightly Galvanized Products properties.

SEA reviewed Phase I and Phase II Environmental Site Assessments (ESAs) for the Estes and Melrose properties. The ESAs identified ten areas of potential environmental concern including areas of soil staining, aboveground storage tanks (ASTs), USTs, and improper management of hazardous materials or wastes. (See Appendix I, Table I-3, "Summary of Areas of Potential Environmental Concern at Proposed Rail Line Connection Site, Cicero, Illinois.") Soil samples from both sites contained petroleum-related contamination at concentrations slightly above Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) cleanup objectives.

SEA's database search identified the Estes property as a LUST site that formerly contained five USTs. According to IEPA records, a private contractor removed all five USTs and discolored

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<sup>48</sup> A RCRA large-quantity generator is defined as a generator of more than 1,000 pounds per month of a RCRA-listed hazardous waste.

<sup>49</sup> Illinois Environmental Protection Agency. *1996 Hazardous Waste Report: Brightly Galvanized Products*, ILD005126297/0310515010, March 1997.

<sup>50</sup> GSC Environmental Laboratories, Inc. *20-Day Certification, 45-Day Report and Corrective Action Completion Report: Turks Motor Express, Inc.*, IEMA No. 971827, November 11, 1997.

<sup>51</sup> Illinois Environmental Protection Agency. Letter from Clifford L. Wheeler to Turks Motor Express/R.R.S. Management, Re: LPC #0310515305, August 12, 1998.

soils near the former USTs in April 1990, but IEPA has not granted formal closure of the site. Because IEPA considers groundwater in the area as Class II groundwater (i.e., a non-potable groundwater source), SEA determined that the contaminants at the Estes property could be managed in place. SEA also determined that soil disturbance during construction would not likely present a risk to the health and safety of construction workers. Moreover, SEA concludes that the presence of other USTs on the Estes property is unlikely.

SEA identified ASTs and USTs on the Melrose property as potential sources of environmental concern. According to the Phase I ESA, two USTs were removed from the property in the late 1980s, although IEPA has no records pertaining to these USTs or their removal. SEA also identified an area of potential concern with three inactive ASTs and one AST containing diesel fuel. Soil samples collected near the ASTs during the Phase II ESA indicated trace amounts of contaminants. However, SEA concurred with the Phase II ESA recommendations to manage the contaminants in place and concludes that the contaminants would not likely pose a risk to the health and safety of construction workers. The Applicants would remove these tanks prior to construction activities. Based on the eventual removal of the ASTs and the low level of soil contamination, SEA determined that the area containing the ASTs would require no further action prior to the proposed construction activities.

#### 5.2.1.2 Jackson, Mississippi

Based on its review of information from government environmental databases, SEA identified two properties of environmental concern within 500 feet of the proposed bypass:<sup>52</sup>

- Jackson Ready Mix Concrete, 103 West Woodrow Wilson Boulevard, reportedly contains a LUST. However, Mississippi Department of Environmental Quality (MDEQ) records indicate permanent closure of the LUST, and MDEQ issued a "No Further Action" letter for the site on January 21, 1991.<sup>53</sup>
- Mississippi Department of Transportation, 2567 North West Street, reportedly contains a LUST. However, MDEQ records indicate permanent closure of the LUST, and MDEQ issued a "No Further Action" letter for the site on June 20, 1994.<sup>54</sup>

SEA reviewed the FRA database to determine whether hazardous materials spills had occurred along the existing IC rail line within 500 feet of the proposed bypass. Although SEA identified ten hazardous materials spills, it was unable to determine whether any of the spills had occurred within 500 feet of the proposed construction site because the database did not provide specific

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<sup>52</sup> Environmental Data Resources, Inc. Jackson Ready Mix, 103 West Woodrow Wilson Avenue, Jackson, MS. Southon, CT, Inquiry Number 0279567, Jr. August 4, 1998.

<sup>53</sup> Phillips, Donna, of Underground Storage Tank Division, Mississippi Department of Environmental Quality. Telephone communication with Kim Farley, Danes & Moore, August 21, 1998.

<sup>54</sup> *Ibid.*

locations. (Refer to Appendix I, Table I-1, "Hazardous Materials Spill Incidents Reported at the Jackson Yard, Jackson, Mississippi.")

During preparation of the PDEA, the Applicants contacted Hinds County Emergency Management to obtain records of any emergency responses relating to hazardous materials spills at or near the area of the proposed bypass.<sup>55</sup> Hinds County Emergency Management noted that the local fire department had responded to four hazardous material spills between 1994 and 1997, which confirmed information that SEA identified in the Federal Railroad Administration (FRA) database.

SEA evaluated the potential impacts of the proposed construction activities at each site the Applicants would acquire. For the closed LUST at the Jackson Ready Mix site, SEA determined that effects would be unlikely because the construction activities do not require excavation, and most construction activities would take off this property. Similarly, SEA determined that proposed construction activities would not disturb hazardous materials at the MDOT property because construction would not occur on the property and vehicles would not need to cross the property to enter the construction area.

#### **5.2.1.3 SEA's Conclusion**

SEA determined that the Applicants' proposed construction projects at Cicero, Illinois could disturb contaminated soils. However, based on the level of contamination, the quality of groundwater, and the proposed construction activities, SEA believes that the waste can be managed in place. At Jackson, Mississippi, SEA determined that the proposed construction activities would avoid property containing hazardous materials. Overall, SEA concludes that the proposed construction activities in Cicero, Illinois and Jackson, Mississippi would not result in significant adverse effects on hazardous materials spill sites or hazardous waste sites if the Applicants follow the construction Best Management Practices presented in Chapter 8, "SEA's Preliminary Recommended Environmental Mitigation." SEA recommends that the Board require the Applicants to follow these Best Management Practices.

#### **5.2.2 Highway/Rail At-Grade Crossings**

SEA evaluated the potential effects of the two proposed construction projects on highway/rail at-grade crossing safety, on vehicle delay, and on emergency vehicle response times. SEA reviewed the proposed construction plans to determine whether they would necessitate new or modified highway/rail at-grade crossings, and it reviewed information from the FRA database regarding highway/rail at-grade crossings. Appendix C, "Safety Analysis Methods and Results," presents a detailed description of the methods developed to assess safety issues at highway/rail at-grade crossings. Appendix D, "Transportation Analysis Methods and Results," presents detailed descriptions of the methods that SEA used to assess vehicle delays and emergency vehicle response at highway/rail at-grade crossings. These appendices contain a complete discussion of the existing conditions at Cicero, Illinois and Jackson, Mississippi.

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<sup>55</sup> Federal Railroad Administration, Railroad Accident/Incident Database, 1993 through 1997.

At Cicero, Illinois, SEA determined that the proposed connection would eliminate the existing highway/rail at-grade crossing at the proposed site; therefore, the Applicants would not need to construct a new highway/rail at-grade crossing at this site. At Jackson, Mississippi, SEA did not conduct an analysis of the potential impacts of construction on highway/rail at-grade crossings because the proposed bypass would not require a new highway/rail at-grade crossing.

Based on its analysis, SEA concludes that the Applicants' proposed construction projects would not cause significant impacts to highway/rail at-grade crossing safety, vehicle delay, and emergency response times; therefore, SEA does not recommend mitigation for potential effects at highway/rail at-grade crossings.

### **5.2.3 Traffic and Roadway Systems**

SEA evaluated the potential effects of the two proposed construction projects on projected traffic and roadway conditions. SEA also evaluated existing local roadway systems and traffic volumes in the area of the proposed construction projects. Appendix D, "Transportation Analysis Methods and Results" contains a complete discussion of the existing conditions and the methods SEA used to evaluate potential impacts on traffic and roadway systems at Cicero, Illinois and Jackson, Mississippi.

Based on its design review for the proposed connection at Cicero, SEA determined that the connection would not cross any roadways. Therefore, SEA determined that the proposed connection does not require a new or modified highway/rail at-grade crossing. SEA concludes that the proposed construction would not cause roadway closures, modifications, or affect any public transportation routes.

Based on its review of design plans for the proposed bypass at Jackson, Mississippi, SEA determined that the bypass would not cross any roadways. Therefore, SEA determined that the proposed connection does not require a new or modified highway/rail at-grade crossing. SEA also concludes that the proposed construction would not cause roadway closures or modifications.

SEA concludes that the Applicants' proposed construction projects at Cicero, Illinois and Jackson, Mississippi would not cause significant impacts to traffic and roadway systems. Therefore, SEA does not recommend any mitigation for potential impacts to traffic and roadway systems.

### **5.2.4 Natural Resources**

SEA evaluated the potential effects of the two proposed construction projects at Cicero, Illinois and Jackson, Mississippi on natural resources. SEA documented existing water resources, wetlands, and biological resources in the vicinity of the two proposed construction projects by consulting with Federal and state natural resource agencies, reviewing published information regarding these natural resources, and considering the Applicants' field investigations that verified the published information.

- **Water Resources.** SEA reviewed U.S. Geological Survey (USGS) 7.5-minute topographic maps, National Wetlands Inventory (NWI) maps, Natural Resources Conservation Service (NRCS) soil surveys, and Federal Emergency Management Agency (FEMA) floodplain maps to note the presence and location of surface waters, wetlands, and floodplains. SEA directed the Applicants to conduct field investigations to verify wetlands, surface waters, and low-lying areas within or adjacent to the proposed construction sites.
- **Biological Resources.** SEA contacted the U.S. Fish and Wildlife Service (FWS); the Illinois Department of Natural Resources (IDNR); and the Mississippi Department of Wildlife, Fisheries, and Parks (MDWFP) about sensitive wildlife habitat (the presence of threatened or endangered species), water resources, and wetlands near the proposed construction sites. SEA reviewed several data sources containing biological resources information, including Internet databases of threatened and endangered species developed by FWS, IDNR, and MDWFP. SEA also reviewed information about parks, forest preserves, refuges, and sanctuaries within 2 miles of the proposed construction projects.

Based on these data, SEA evaluated the potential effects from the proposed construction activities on these natural resources in relation to requirements of Federal and state regulations as well as the Applicants' own policies and procedures for the construction of rail lines and facilities. Appendix J, "Natural Resources Analysis Methods and Results," presents SEA's environmental review methods, analysis results, and conclusions.

#### **5.2.4.1 Cicero, Illinois**

##### **Water Resources**

The Applicants identified two wetlands within 500 feet of the proposed connection during field investigations. They documented a wetland in a ditch that was approximately 75 feet long and 5 feet wide within the proposed construction area. The wetland is west of the IC/IC spur intersection and approximately 5 feet south of the IC tracks within the existing right-of-way. The wetland receives surface runoff from adjacent areas. The Applicants also documented a wetland on the east side of the BRC tracks, approximately 400 feet from the south end of the proposed connection. The wetland is in an approximately 2,600-foot-long drainage ditch outside of the proposed construction area. The Applicants did not identify any other surface waters (i.e., intermittent and perennial streams, ponds, rivers, or wetlands) within 500 feet of the proposed connection.

SEA determined that the proposed construction activities would disturb the wetland within the existing IC right-of-way because construction activities would require removing trees on the edge of the wetland. SEA notes that clearing vegetation at the wetland edge would likely not require a permit under Section 404 of the Clean Water Act. SEA determined that the wetland area would continue to serve the primary function of storing surface runoff. SEA concludes that the disturbance would be limited to the construction period and no long-term adverse effects would occur on this wetland. Because the wetland located on the east side of the BRC tracks was not

within the proposed construction area, SEA determined that it would not be disturbed by construction activities.

### **Biological Resources**

SEA reviewed information from FWS and IDNR about the presence of threatened or endangered species in the vicinity of the proposed connection. Neither agency's records identified threatened or endangered species in the proposed project area. Based on this information, SEA determined that it is unlikely that the proposed project would affect any threatened or endangered species. SEA is providing the Draft EA to FWS and IDNR for their review and concurrence. No forest preserves, refuges, or wildlife sanctuaries occur within 2 miles of the proposed connection; however, 13 parks are within 2 miles. The nearest park, Piotrowski Park, is located ½ mile northeast of the proposed connection. SEA determined that the distance from the proposed connection would effectively shield the park from any adverse effects.

SEA determined that vegetation in the proposed construction area primarily consists of opportunistic species of trees, flowers, grasses, and herbs, with herbs providing the predominant ground cover. Appendix J, "Natural Resources Analysis Methods and Results," Table J-1, "Vegetation Identified at Proposed Construction Sites," lists the vegetation found along the IC, BRC, and IC rail spur rights-of-way during field investigations.

Wildlife habitat in the vicinity of the proposed construction site consists of previously disturbed land with vegetation described above. The areas along the IC, BRC, and IC rail spur rights-of-way provide habitat that is attractive to wildlife, particularly birds and rodents (i.e., rabbits, squirrels, rats, and mice).

SEA determined that the proposed construction would cause a permanent loss of approximately 15 trees and all vegetation within 30 feet of the proposed connection. SEA expects that the elimination of trees along the IC and BRC rights-of-way would displace some tree-dwelling wildlife (squirrels and birds). SEA anticipates that other wildlife (mainly rabbits, rats, and mice) would avoid the area during construction activities but would return after the habitat had regrown.

#### **5.2.4.2 Jackson, Mississippi**

### **Water Resources**

SEA identified one intermittent stream (#4 Tributary of Town Creek), a small drainage ditch, and one runoff lagoon within 500 feet of the proposed bypass. At its closest point, the #4 Tributary is approximately 300 feet west of Jackson Yard and the proposed bypass. The small drainage ditch flows east to west, crosses under the north side of Jackson Yard, and flows into the #4 Tributary. The runoff lagoon is on IC property, approximately 500 feet east of the north end of the proposed bypass or 1,600 feet north of the Woodrow Wilson Avenue overpass.

SEA determined that the #4 Tributary of Town Creek, the small drainage ditch, and the runoff lagoon could experience some direct or indirect effects from the proposed construction activities. While SEA notes that the proposed connection could affect water resources in the vicinity of the proposed bypass during construction activities, SEA concludes that construction would not cause long-term effects.

### **Biological Resources**

SEA reviewed information from FWS and MDWFP about the presence of threatened or endangered species in the vicinity of the proposed bypass. Both agencies indicated that they had no records of threatened or endangered species in the proposed project area. Based on this information from FWS and MDWFP, SEA determined that the proposed bypass would not likely affect any threatened or endangered species in the area. SEA will provide the Draft EA to FWS and MDWFP for their review and concurrence.

SEA did not identify any forest preserves, refuges, or wildlife sanctuaries within 2 miles of the proposed bypass. SEA determined that 16 parks are within 2 miles of the proposed bypass; the nearest park, Wightman Park, is  $\frac{1}{4}$  mile to the southeast. Appendix J, "Natural Resources Analysis Methods and Results," Table J-2, "Parks and Forests Within Two Miles of the Proposed Construction Sites," lists the parks in the vicinity of the proposed bypass. SEA determined that Wightman Park, the nearest park, would sustain no adverse effects as a result of the proposed bypass because of its distance from the proposed construction and because the industrial/commercial buildings between the proposed bypass and the park shield the park.

SEA determined that limited vegetation exists in the area of the proposed bypass. Regular spraying with herbicides prevents vegetation growth in Jackson Yard and the right-of-way. On the property the Applicants would acquire, the Applicants observed primarily opportunistic species of grasses, herbs, and shrubs, with herbaceous plants providing the predominant ground cover. Vegetation within the right-of-way is sparse and opportunistic because of routine herbicide applications. SEA determined that the proposed bypass construction would not affect vegetation within the current right-of-way. Table J-1, "Vegetation Identified at Proposed Construction Sites," presents a list of vegetation found along the right-of-way and west of Jackson Yard.

SEA determined that the right-of-way is an unlikely habitat because of activity within Jackson Yard and the absence of vegetation. However, the property the Applicants would acquire is a likely wildlife habitat because the grasses, shrubs, and trees provide cover. Materials stored on the property adjacent to the right-of-way also provide cover for nests of birds and small mammals (rodents).

SEA anticipated that some wildlife habitat would be disturbed or eliminated on the 630-foot by 20-foot parcel that the Applicants would acquire. SEA expects wildlife would temporarily avoid the area during construction but would return following construction activities.

### 5.2.4.3 SEA's Conclusion

SEA concluded that the Applicants' proposed construction projects at Cicero and Jackson would not result in any significant adverse natural resource impacts. Nonetheless, SEA recommends the Board require the Applicants to comply with Federal, state and/or local regulations and with the construction Best Management Practices to protect these resources. See Chapter 8, "SEA's Preliminary Recommended Environmental Mitigation," for these Best Management Practices.

### 5.2.5 Air Quality

SEA evaluated the potential effects of the two proposed construction projects on air quality. SEA considered air quality effects to be significant if the proposed construction projects would lead to significant long-term increases in pollutant emissions or excessive fugitive dust emissions. Appendix F, "Air Quality Analysis Methods and Results," contains a complete discussion of the existing conditions at Cicero, Illinois and Jackson, Mississippi and the methods SEA used to evaluate potential impacts on air quality as a result of the proposed construction projects.

SEA determined that both of the proposed CN/IC construction projects would cause temporary changes to air quality during construction. Construction equipment and related vehicles would produce emissions, and construction activities would generate fugitive dust. SEA determined that the increased emissions at both locations would be short-term effects, which would not change the attainment status of Cook County, Illinois or Hinds County, Mississippi. SEA also determined that climatic effects associated with fugitive dust emissions at both locations would be minimal.

SEA concludes that with SEA's recommended construction Best Management Practices as mitigation measures, the Applicants' proposed construction projects at Cicero, Illinois and Jackson, Mississippi would not cause significant adverse air quality impacts. Therefore, SEA recommends that the Board require the Applicants to implement the construction Best Management Practices described in Chapter 8, "SEA's Preliminary Recommended Environmental Mitigation."

### 5.2.6 Noise

SEA evaluated the potential effects of the two proposed construction projects on noise. SEA considered noise effects to be significant if changes in rail operations, as a result of the proposed construction activities, would expose noise-sensitive receptors along rail lines to noise levels of 65 A-weighted decibels (dBA) or more and to increases of at least 3 dBA compared to pre-construction conditions.

Although SEA determined that construction activities would create new sources of noise in the vicinity and cause noise levels to increase temporarily, it determined that these activities would not cause long-term noise effects. Thus, SEA's noise analysis focused on noise effects associated with changes in rail operations that would occur following the proposed construction



projects. Appendix G, "Noise Analysis Methods and Results," contains a complete discussion of the methods SEA used to evaluate potential noise impacts as a result of the proposed construction projects.

In Cicero, Illinois, the Applicants estimated that three trains per day would use the proposed rail line connection. SEA determined that operating trains over the new connection would extend the existing 65-dBA contour to the south because the proposed connection would extend south of the existing IC tracks. However, SEA determined that no new noise-sensitive receptors would fall within the 65-dBA contour because the contour would extend into an industrial area of Cicero.

In Jackson, Mississippi, the Applicants estimated that three trains per day would use the proposed bypass. SEA determined bypass construction and operation would extend the existing 65-dBA contour to the west because the proposed bypass contour would extend 70 feet west of the tracks. Because the land use in this area is industrial, SEA determined that construction of the proposed bypass would not affect noise-sensitive receptors.

Because potential changes in noise levels would affect no new noise-sensitive receptors, SEA concludes that the Applicants' proposed construction projects at Cicero, Illinois and Jackson, Mississippi would not cause significant adverse noise impacts. Therefore, SEA does not recommend mitigation measures for noise effects.

#### **5.2.7 Environmental Justice**

SEA defines an environmental justice effect as a disproportionately high and adverse impact on low-income and minority populations.<sup>56</sup> SEA evaluated the potential effects of the two proposed construction projects on environmental justice populations. SEA examined a broad range of potential effects that could result from the two proposed construction projects, including effects on safety, traffic, air quality, noise, cultural resources, hazardous waste sites and hazardous materials transport, natural resources, and land use. To determine whether these potential effects could occur in areas with minority and low-income populations, SEA identified the area of potential effect (i.e., the geographic area over which the potential effects could occur) and the demographic characteristics of populations within the area. Appendix L, "Environmental Justice Analysis Methods and Results," contains a complete definition of an environmental justice population, a description of SEA's criteria of significance, and a complete description of the methods SEA used to determine whether the proposed construction projects could have disproportionately high and adverse impacts on low-income and minority populations.

At Cicero, Illinois, SEA determined that none of the populations potentially affected by the proposed construction constituted an environmental justice population (i.e., greater than 50 percent minority or low-income or 10 percent greater than the percentage of the entire

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<sup>56</sup> See Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," Section 1-01, February 11, 1994, 59 FR 7630.

county). Therefore, SEA determined that no disproportionately high and adverse impacts on environmental justice populations would result from the proposed construction project.<sup>57</sup>

At Jackson, Mississippi, SEA determined that the population within the area of potential effect near the proposed bypass constituted an environmental justice population. However, SEA identified no potential significant impacts of bypass construction (i.e., no significant air quality, noise, traffic, land use, or other impacts). Therefore, SEA determined that no disproportionately high and adverse impacts on environmental justice populations would result from the proposed construction project.

SEA concludes that the Applicants' proposed construction projects at Cicero, Illinois and Jackson, Mississippi would not cause disproportionately high and adverse effects on environmental justice populations. Therefore, SEA does not recommend mitigation measures.

### **5.2.8 Land Use**

SEA evaluated the potential effects of the two proposed construction projects on land use. (See Section 5.1, "Description of Proposed Construction Projects," for more information.) SEA conducted its evaluation in accordance with Board regulations at 49 CFR 1105.7(e)(3) and criteria that the Board had developed for previous transactions. A description of the environmental thresholds and criteria SEA used in its land use analysis is contained in Appendix K, "Land Use Analysis Methods and Results."

SEA evaluated the effects of the proposed construction projects on several land uses of concern (e.g., those sensitive to environmental changes), including residential properties, industrial buildings, educational and medical facilities, prime farmlands, coastal zones, and Native American lands. To conduct its analysis, SEA used topographic and zoning maps, aerial photographs, Geographic Information System (GIS) data, computerized mapping, and field investigations of the proposed site area. SEA used additional information, as needed, from local, county, and state planning agencies. Appendix K, "Land Use Analysis Methods and Results," contains a complete discussion of the methods SEA used to evaluate environmental impacts on land use.

SEA determined that both construction projects would be compatible with surrounding land uses and would comply with applicable local zoning ordinances. SEA concludes that the proposed projects in Cicero, Illinois and Jackson, Mississippi would not result in any significant adverse impacts on land use. Therefore, SEA does not recommend mitigation measures for potential land use effects.

### **5.2.9 Cultural Resources**

SEA evaluated the potential effects of the two proposed construction projects on cultural resources. A cultural resource is any prehistoric or historic archeological site or any aboveground

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<sup>57</sup> SEA defined a "high and adverse" effect to mean a significant human health or environmental impact.

resource that is at least 50 years old. A significant cultural resource is a historic district, site, building, structure, or object that is included or eligible for inclusion in the National Register of Historic Places (NRHP) in accordance with 36 CFR 800.4.

To conduct its analysis, SEA identified historic and archeological properties that the proposed construction projects might affect. In accordance with Board requirements and Advisory Council on Historic Preservation (ACHP) regulations, SEA identified the area of potential effect for potential archeological sites and historic structures that construction activities could disturb. SEA evaluated potentially significant historic properties according to the NRHP criteria described in 36 CFR 60.4, which include factors such as age, type, use, uniqueness, and historical context. SEA identified historic properties through records searches and field investigation data and confirmed its conclusions through consultations with the appropriate State Historic Preservation Offices (SHPO). SEA conducted its analysis with the help of qualified archeologists and historians. Appendix H, "Cultural Resources Analysis Methods and Results," presents a detailed description of the methods used to evaluate the potential impacts of the proposed construction projects on cultural resources.

For Cicero, Illinois, SEA determined that previous development in the area of the proposed connection indicates massive disturbance, including construction and landscape alterations from filling or removing natural soils. Daily use of the area by industrial businesses and railroads also caused significant alterations to the landscape. SEA determined that any archeological sites remaining after such activities would be compromised to such a degree that they would have lost all integrity and would provide no valuable information to the archeological record. SEA also determined that none of the five buildings that would be demolished at the Cicero, Illinois site meet the 50-year age requirement for NRHP listing and, therefore, recommends no further assessment of these buildings.

For Jackson, Mississippi, SEA concludes that substantial disturbances have already occurred at the construction site and destroyed the integrity of any archeological sites on either the private property or the rail yard so that they would provide no information valuable to the archeological record. SEA evaluated the proposed action and determined that construction of the proposed bypass would not compromise the structural integrity, condition, or significance of any buildings within the area of potential effect.

SEA concludes that the Applicants' proposed construction projects at Cicero, Illinois and Jackson, Mississippi would not cause significant effects to cultural resources. Therefore, SEA does not recommend mitigation measures.

### **5.3 SEA's Conclusion**

SEA has reviewed the potential environmental effects associated with the Applicants' proposed construction projects at Cicero, Illinois and Jackson, Mississippi. SEA concludes that no potential exists for significant environmental effects if the Applicants implement construction Best Management Practices and obtain all necessary construction permits. Therefore, SEA recommends that the Board require the Applicants to use the construction Best Management Practices described in Chapter 8, "SEA's Preliminary Recommended Mitigation."

## **CHAPTER 6**

### **ENVIRONMENTAL CONSEQUENCES—CUMULATIVE EFFECTS**

The regulations of the Council on Environmental Quality (CEQ) implementing the National Environmental Policy Act (NEPA) define a cumulative effect as "the impact on the environment which results from the incremental consequences of an action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions" (40 CFR 1508.7). For the proposed Canadian National Railway Company/Illinois Central Corporation (CN/IC) Acquisition, SEA addressed cumulative effects in this Draft EA, where appropriate, because the environmental effects of the proposed Acquisition, when added to or in interaction with other actions that are not related to the proposed CN/IC Acquisition, could result in cumulative effects that may be significant. This chapter presents the Section of Environmental Analysis' (SEA's) evaluation of potential cumulative effects.

NEPA created the CEQ to develop policy guidelines and oversee Federal agencies' implementation of NEPA. To assist Federal agencies in assessing cumulative effects under NEPA, CEQ developed a handbook entitled *Considering Cumulative Effects under the National Environmental Policy Act*. Using these guidelines, SEA evaluated the cumulative effects from the proposed CN/IC Acquisition. SEA identified past, present, and reasonably foreseeable changes that could result in cumulative environmental effects when combined with the environmental effects of the proposed Acquisition. Specifically, SEA evaluated activities that, when combined with the potential impacts of the proposed Acquisition, could result in significant cumulative environmental impacts from changes in railroad operations or from construction activities. SEA evaluated four types of activities that could result in cumulative effects:

- Other planned construction projects on the U.S. portions of the CN and IC systems that are not Acquisition related (because they would occur regardless of the proposed Acquisition) but could result in cumulative effects with the proposed Acquisition, such as previously planned track improvements, highway/rail at-grade crossing warning device projects, or rail line connection projects.
- Other railroad operating activities that are not Acquisition related but could result in cumulative effects, such as marketing or operating agreements that the Applicants have entered into with other railroads and plan to implement in essentially the same time frame as the proposed CN/IC Acquisition.
- Other Board actions that could affect resources in the same geographical area as the proposed CN/IC Acquisition.

- Other local projects SEA identified that could have cumulative effects in communities with potential disproportionately high and adverse environmental effects on minority or low-income populations.
- Other local projects or activities, which potentially have cumulative effects, that agencies and the public have brought to SEA's attention and SEA determined could have cumulative effects warranting environmental review. (To date, SEA has not received notification of any such projects. If during the comment period on the Draft EA, SEA receives information on local projects that could have cumulative effects and SEA determines that there is enough potential for significant cumulative effects, SEA will evaluate these effects in the Final EA.)

Chapter 4, "Environmental Consequences—Operational Changes," and Chapter 5, "Environmental Consequences—Construction Projects," present SEA's analysis of the direct effects of the proposed CN/IC Acquisition. SEA considered these direct effects and its mitigation recommendations for those effects in its evaluation of potential cumulative effects.

#### **6.1 NON-ACQUISITION RELATED CONSTRUCTION PROJECTS**

SEA identified a number of planned non-Acquisition related construction projects, all of which are minor, that the Applicants plan to implement regardless of the outcome of this transaction, and it evaluated these projects to see whether if added to or in conjunction with the potential environmental impacts of the proposed CN/IC Acquisition they could cause significant cumulative environmental effects. Such projects include:

- Yard construction activities.
- Grade separation construction activities.
- Track replacement or new track installation.
- New or modified highway/rail at-grade crossings.
- New or upgraded highway/rail at-grade crossing warning devices.
- New or upgraded railroad signal or electrical equipment.

SEA first examined the proposed project locations to determine whether any are within the same geographic area as other Acquisition-related rail activities and therefore could result in cumulative environmental effects on the same resources. SEA identified the following non-Acquisition-related projects that would have potential cumulative effects on the same resources affected by the proposed CN/IC Acquisition. The other projects SEA evaluated would not occur in the same geographic area as potential environmental effects of the proposed Acquisition.

- Thirteen highway/rail at-grade crossing warning device projects in Illinois. The Applicants have planned to implement the devices on three rail line segments that met or exceeded the Board's thresholds for vehicle delay analysis during its review of this transaction. For these planned highway/rail at-grade crossing warning device projects, SEA examined the potential cumulative effects on vehicle delay for those rail line segments.

- A planned rail line connection at Harvey, Illinois. The connection would be adjacent to a rail line segment that exceeded the Board's threshold for air quality analysis. For this rail line connection, SEA considered the potential cumulative effects on air quality. Because the Applicants plan no Acquisition-related construction for the area, SEA did not identify any potential cumulative construction effects that would result from this project.

The following sections present SEA's evaluation of potential cumulative effects from these construction projects.

### 6.1.1 Highway/Rail At-grade Crossing Warning Device Projects

The Applicants propose to complete 13 highway/rail at-grade crossing warning device projects on three rail line segments in Illinois. Table 6-1, "Highway/Rail At-grade Crossing Protection Projects," presents the 13 projects that SEA analyzed for potential cumulative effects.

**TABLE 6-1  
HIGHWAY/RAIL AT-GRADE CROSSING WARNING DEVICE PROJECTS**

City	Street	State	Railroad	Description
Barclay	Barlow Road	IL	IC	Install gates.
Bissell	Bissell Road	IL	IC	Install constant warning time device.
Gilman	Douglas (TR 58)	IL	IC	Install gates and cantilevers.
Indian Oaks	Trunk Route 37	IL	IC	Install constant warning time device.
Marino	3 <sup>rd</sup> Street <sup>a</sup>	IL	IC	Upgrade gates. Install constant warning time device.
Marino	Adams Street <sup>a</sup>	IL	IC	Upgrade gates. Install constant warning time device.
Marino	Division Street <sup>a</sup>	IL	IC	Upgrade gates. Install constant warning time device.
Marino	Trunk Route 11	IL	IC	Upgrade gates. Install constant warning time device.
Peotone	Coming Street <sup>a</sup>	IL	IC	Install constant warning time device. Upgrade signals.
Peotone	Crawford Ave.	IL	IC	Install constant warning time device. Upgrade signals.
Peotone	Main Street <sup>a</sup>	IL	IC	Install constant warning time device. Upgrade signals.
Peotone	Trunk Route 3	IL	IC	Install gates.
Spaulding	High Meadow Rd.	IL	IC	Install gates.

<sup>a</sup> SEA analyzed these highway/rail at-grade crossings for vehicle delays. (See Chapter 4, "Environmental Consequences—Operational Changes," Section 4.6, "Highway/Rail At-grade Crossing Delay.")

Traffic would increase on five of these highway/rail at-grade crossings to exceed the Board's threshold for analysis in this case. SEA evaluated the potential for vehicle delays at these highway/rail at-grade crossings and determined that additional Acquisition-related freight train traffic would not cause significant vehicle delays. These crossings are located along the following segments:

- Matteson, Illinois-to-Kankakee, Illinois.
- Mt. Pulaski, Illinois-to-Springfield, Illinois.
- Gilman, Illinois-to-Gibson, Illinois.

For more information on SEA's delay analysis for the proposed CN/IC Acquisition, see Section 4.6, "Highway/Rail At-grade Crossing Delay."

These planned crossing improvement projects would involve the installation or upgrade of warning devices, signals, and gates. The Applicants propose to complete these projects to improve overall safety at these highway/rail at-grade crossings. The projects would occur on existing railroad right-of-way and would generally require less than one week of construction activity. The Applicants would perform construction activity between train passes to minimize potential disruption to train operations. Some vehicle traffic disruption may occur during trenching activities for underground cable installation, which typically requires one lane of the roadway to be temporarily closed for several hours. Following completion of construction activities, testing the new or upgraded equipment (e.g., signal operation, gate closing) would cause some additional temporary traffic delays for several hours. Because of the short duration of the projects and minimal disruption to vehicle traffic, SEA concludes that no significant cumulative effects on traffic delay would result from these projects and the proposed CN/IC Acquisition.

### **6.1.2 Proposed Connection at Harvey, Illinois**

The Applicants plan to construct a rail line connection in the City of Harvey, Cook County, Illinois, to facilitate the movement of trains between CN and IC rail lines. The Applicants had previously planned this construction, so it is not Acquisition related. The planned connection would be adjacent to a rail line segment that exceeded the Board's threshold for air quality analysis; therefore, SEA analyzed the proposed connection for potential cumulative effects on air quality.

At Harvey, an existing IC line runs north-south on an elevated bed and is intersected at-grade by an east-west CN line. Currently, CN trains destined for the Markham-Gateway-Moyers complex connect with IC's north-south line using a curveout in the northeast quadrant of the Harvey intersection. Trains must pull northward on IC's track and then back into the Markham Yard.

The Applicants' planned Harvey connection would increase the efficiency of rail operations through construction of a "Y"-shaped connection (wye) in the southeast quadrant of the IC and CN intersection. The connection would consist of a west wye (2,100 feet) and an east wye



(1,577 feet). The wye would simplify access by allowing eastbound and westbound CN trains to head directly into the Markham Yard complex (avoiding their current complicated and time consuming maneuver). SEA estimated that approximately three trains would use the proposed connection each day.

SEA evaluated potential air quality effects of the proposed CN/IC Acquisition for all Acquisition-related activities in Cook County. (See Chapter 4, Section 4.12, "Air Quality.") SEA's analysis of air quality effects in Cook County included freight train activity over the planned connection at Harvey and adjacent rail line segments. SEA concluded only NO<sub>x</sub> emissions would exceed the EPA emissions screening thresholds that SEA used. For NO<sub>x</sub>, SEA conducted a more detailed analysis and determined that NO<sub>x</sub> emissions from Acquisition-related changes would not exceed 1 percent of the total emissions inventory for Cook County. Based on this analysis, SEA concludes that the proposed CN/IC Acquisition would not significantly affect air quality in Cook County.

SEA considered the operational effects of this planned construction on the total amount of emissions that railroad activities contribute to emissions in Cook County. SEA determined that because the new connection would reduce train travel time, a small decrease in locomotive emissions would occur. SEA also considered air quality effects related to construction at the proposed Harvey Connection, and determined that the combustion of fuel used in construction equipment would result in increased emissions of air pollutants, but these emissions would be temporary and even when considered with the potential effects of the proposed Acquisition, would not be sufficient to affect the air quality in Cook County. Based on its analysis, SEA concludes that no significant temporary or long-term cumulative effects on air quality would follow construction or operation of the planned connection.

## **6.2 OTHER OPERATING ACTIVITIES**

SEA also considered the potential cumulative effects from other Applicant operating activities that could occur in the same time frame as the proposed CN/IC Acquisition. Specifically, SEA considered the potential environmental effects of two agreements the Applicants entered into with other railroads:

- The Marketing Alliance Agreement among CN, IC, and The Kansas City Southern Railway (KCSR).
- The Haulage Agreement with Wisconsin Central Limited (WC).

### **6.2.1 Alliance Agreement**

On April 15, 1998, CN and IC entered an Alliance Agreement with KCSR to inaugurate a 15-year marketing and operating Alliance. The Applicants have stated that the purpose of this Alliance is to improve interline service across these three railroads and thus extend the market reach of their existing and potential customers in north-south trade flows.

The Alliance provides for coordination by the three railroads regarding sales and marketing, operations, fleets, and information systems for the purpose of developing new traffic. Specifically, the parties have agreed to establish Springfield, Illinois, and Jackson, Mississippi, as the principal interchange points between the railroads and Jackson for joint operation of yards and facilities.

The Alliance is not dependent on the proposed CN/IC Acquisition, and it will continue in effect for at least 15 years, regardless of the outcome of the proposed CN/IC Acquisition proceeding. The Applicants' Operating Plan includes changes in traffic and yard activity as a result of the Alliance over the proposed CN/IC system. Consequently, SEA's analysis of environmental effects of the proposed CN/IC Acquisition on the CN/IC system reflects and incorporates cumulative effects of the Alliance, although it does not distinguish effects of the Alliance from those of the Acquisition alone.<sup>58</sup>

SEA also investigated whether the Alliance, together with the CN/IC Acquisition, would have cumulative effects on any KCSR lines, including lines of KCSR's affiliate, Gateway Western Railway Company (GWR). SEA determined that cumulative effects warranting further analysis would be most likely to occur on KCSR lines at interchange points with CN or IC where traffic on Applicants' lines would experience increases meeting the Board's thresholds for reporting and analysis. SEA further determined, based on the Applicants' Operating Plan, that Jackson and Springfield were the only two such interchange points.

SEA reviewed information provided by the Applicants regarding traffic interchanged between them and KCSR at Jackson and Springfield. At Jackson, train traffic would increase by 3.7 trains per day with a 14 percent increase in gross-ton miles of freight. This traffic would be moving through Jackson to Shreveport, Louisiana. No air quality nonattainment areas exist between Jackson and Shreveport; therefore, SEA concluded that this increase in traffic, which is less than the Board's thresholds for air quality analysis for attainment areas, would result in negligible air quality impacts over this route.

Furthermore, information available from the Applicants indicates that KCSR would consolidate trains between Jackson and Shreveport if the Acquisition is approved, resulting in train traffic increases of less than three trains per day on this route. From Shreveport to Dallas, Texas, the train traffic resulting from the Alliance Agreement would decrease to two trains per day, which is less than the Board's threshold for air quality analysis in this case. SEA's concludes that no cumulative environmental effects would occur over these routes.

At Springfield, train traffic would increase by 1.4 trains per day with a 330 percent increase in gross ton-miles of freight, which would exceed the threshold for environmental analysis in the

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<sup>58</sup> Also on April 15, 1998, CN and KCSR entered a second agreement (Access Agreement). The Access Agreement, which would become effective upon Board approval of the CN/IC control transaction, provides for the granting of certain haulage and trackage rights between CN/IC and KCSR. Because the Applicants' Operating Plan reflects traffic and changes on CN and IC lines and facilities as a result of the Access Agreement, those changes are also reflected in SEA's environmental analysis of the proposed CN/IC Acquisition. Chapter 3, "Project Description," presents more detail on the Access Agreement.

Board's environmental rules (a 100 percent increase in gross ton-miles). This traffic would travel through Springfield to Kansas City, Kansas. SEA did not identify any air quality nonattainment areas between Springfield and Kansas City.

However, because the route between Roodhouse, Illinois, and Kansas City is the primary east-west route for KCSR, the railroads expect that the existing gross ton miles on this route is so high, it is unlikely that the relatively small Alliance-related increase would exceed the Board's threshold of a 100 percent increase in gross ton miles. Based on this information, SEA concludes that no significant cumulative environmental effects would occur over the route from Roodhouse, Illinois to Kansas City, Kansas.

Based on SEA's determination that air quality impacts in the Springfield area would not be significant, SEA concluded that no significant cumulative effects on air quality would occur on the route between Springfield and Roodhouse. (See Section 4.11, "Air Quality," for the results of SEA's air quality analysis.) Therefore, SEA concludes that the Alliance Agreement and the proposed CN/IC Acquisition would not result in significant cumulative effects on KCSR lines at and beyond interchange points with CN/IC.

#### **6.2.2 Haulage Agreement with Wisconsin Central Limited**

CN does not own any rail lines between Duluth, Minnesota/Superior, Wisconsin, and Chicago, Illinois, a key link for CN freight between Western Canada and Chicago, Illinois. Since September 1997, Wisconsin Central Limited (WC) has carried CN's intermodal traffic between Duluth/Superior and Chicago in accordance with a haulage rights agreement between CN and WC. Until August 31, 1998, CN's carload and bulk traffic between those points was carried by The Burlington Northern Santa Fe Railway Company (BNSF) in accordance with a haulage agreement CN had with that railroad. As of September 1, 1998, however, all CN traffic formerly handled by BNSF between Duluth/Superior and Chicago is now being hauled by WC under the terms of a new haulage agreement between CN and WC. That agreement, which is not related to the proposed CN/IC Acquisition, will continue in effect for 20 years.

With this new haulage agreement, all CN traffic on the BNSF line would move to the WC route, resulting in an increase of 4.7 trains per day over the WC line and a corresponding decrease on the BNSF line. As a result of efficiencies generated by the proposed CN/IC Acquisition, the total traffic over the WC route would decrease by almost one train per day, while the total gross ton-miles of freight would increase by approximately 30 percent. Based on this information, SEA has determined that the proposed CN/IC Acquisition would not result in significant cumulative environmental effects on any of WC's lines.

### **6.3 OTHER BOARD ACTIONS**

SEA also evaluated whether there would be any potential cumulative effects from the recently approved Conrail Acquisition, and the proposed KCSR rail line connection in Geismar, Louisiana.

### 6.3.1 Conrail Acquisition

SEA reviewed the Conrail Draft Environmental Impact Statement and the Final Environmental Impact Statement to determine whether any associated construction and/or rail activities would have the potential to contribute to a cumulative effect. SEA first identified Conrail Acquisition-related activities which would take place in the same geographic area of proposed CN/IC-related increases in rail activities that exceed the Board's threshold for environmental analysis for this case. Then, SEA considered the nature of the potential effects of each activity. Based on this review, SEA considered potential cumulative effects that could result from the proposed CN/IC Acquisition in combination with the following activities:

- Air Quality in three Illinois counties (Will, Cook, and Champaign Counties).
- Passenger rail safety on one CN/IC rail line segment where NS has a Conrail Acquisition-related increase in trackage rights.
- Traffic delay in northwest Indiana (East Chicago, Gary, Hammond, and Whiting), specifically Barr Yard.

#### 6.3.1.1 Air Quality

SEA identified two counties in Illinois, (Champaign and Cook Counties) that it evaluated for potential air quality impacts for both the Conrail Acquisition and the proposed CN/IC Acquisition. EPA has designated Champaign County as attainment for all criteria pollutants and Cook County, Illinois, as severe nonattainment for ozone and moderate nonattainment for  $PM_{10}$ .

SEA identified six rail line segments, two rail yards, and one intermodal facility in Cook County and one rail line segment in Champaign County that, as part of the CN/IC Acquisition, would meet or exceed the Board's thresholds in this case. SEA reviewed the Applicants' Operating Plan and estimated that  $NO_x$  emissions would increase by 186.4 tons/year and 0.2 tons/year in Cook and Champaign Counties, Illinois, respectively. The increased  $NO_x$  emissions are well under 1 percent of the existing county-wide  $NO_x$  emissions. Therefore, SEA does not expect potential adverse impacts because of this relatively small emissions increase.

In its environmental review of the Conrail Acquisition, SEA estimated that annual  $NO_x$  emissions for Cook County would result in a net decrease of 212.9 tons/year. For Champaign County, SEA estimated that annual  $NO_x$  emissions would increase by 223.0 tons/year. SEA concluded that this increase would not result in significant adverse impacts.

In these circumstances, SEA concludes that the cumulative air quality impacts of the two Board actions in Cook County would result in a net decrease in  $NO_x$  emissions. SEA also concludes that the small increase in  $NO_x$  emissions in Champaign County would not result in significant air quality impacts.

## 6.3.1.2 Passenger Rail Safety

SEA identified four IC rail line segments in Illinois that met the analysis thresholds for passenger rail safety and would experience an increase in train traffic resulting from the Conrail Acquisition. The CN/IC Applicants estimate that train traffic on the four segments, which run between Chicago and Gilman, Illinois, would increase by five to seven trains per day over a base of 12 to 19 trains per day. SEA determined that the increased freight train traffic would not result in a significant impact to passenger rail safety. Norfolk Southern also operates trackage rights train traffic over these four segments. As a result of the Conrail Acquisition, the NS traffic is projected to increase by three trains per day over a base of two existing trackage rights trains. SEA determined in the analysis of the Conrail Acquisition that this increase in freight traffic would not result in a significant impact to passenger rail safety. To analyze potential cumulative impacts, SEA combined the traffic from the two acquisitions and determined the increased risk of passenger-freight collisions. Table 6-2 "Cumulative Passenger Rail Safety Impacts," shows the results of this analysis. Because the results indicate that an accident would not occur more frequently than once every 150 years (SEA's criterion for significance), SEA concludes the cumulative increase in train traffic would not result in a significant impact to passenger rail safety on these segments.

**TABLE 6-2  
CUMULATIVE PASSENGER RAIL SAFETY IMPACTS**

Segment ID	Origin	Destination	Percent Change in Collision Rate	Post-Acquisition Interval Between Collisions (Years) <sup>a</sup>	Cumulative Post-Acquisition Interval Between Collisions (Years) <sup>b</sup>
Norfolk Southern Segment					
N-498	IC 93 <sup>rd</sup> Street, IL	Gibson City, IL	160	250	NA
CN/IC Segments					
185	Homewood, IL	Matteson, IL	40	2,413	2,367
187	Matteson, IL	Kankakee, IL	56	423	423
190	Kankakee, IL	Otto, IL	53	2,206	2,193
205	Otto, IL	Gilman, IL	53	557	554

<sup>a</sup> These results are based on the individual analyses for the Conrail Acquisition and CN/IC Acquisition.

<sup>b</sup> SEA calculated these results as part of the environmental analysis for the proposed CN/IC Acquisition to determine cumulative impacts resulting from the impacts of the proposed CN/IC Acquisition and the Conrail Acquisition. Because the results indicate that an accident would not occur more frequently than once every 150 years (SEA's criterion for significance), SEA concludes the cumulative increase in train traffic would not result in a significant impact to passenger rail safety on these segments.

### 6.3.1.3 Traffic Delay

The Four City Consortium in Indiana (East Chicago, Gary, Hammond, and Whiting) raised various environmental concerns during the Conrail proceeding because of unique local circumstances. Traffic delay on the rail line segment from Pine Junction to Barr Yard (C-023) was a main area of concern. Based on SEA's analysis of traffic delay and grade crossing safety, the Board required CSX to implement certain mitigation measures to address potential environmental impacts on this rail line segment.

Rail line segment C-023 runs east-west into Barr Yard. The IC rail line segment between Harvey and 137<sup>th</sup> Street (Segment 174) runs north/south and crosses the CSX line (C-023) just east of Barr Yard. Because the rail lines cross at a grade-separated rail crossing, there is no potential for train traffic on one railroad to disrupt or delay rail traffic on the other railroad. Therefore, SEA concludes that no significant cumulative effects on traffic delay would result from the proposed CN/IC Acquisition and the Conrail Acquisition east of Barr Yard on rail line segment C-023.

### 6.3.2 Geismar, Louisiana

The Kansas City Southern Railway (KCSR) petitioned the Board in June 1995 for approval to build a 9-mile rail line to service three petrochemical facilities in Geismar, Louisiana.

On August 27, 1998 the Board issued a decision (Finance Docket No. 32530) in the Geismar proceeding. This decision formally suspended all action on the pending KCSR Geismar proceeding until after the Board reached a final decision on the proposed CN/IC Acquisition. In its decision, the Board found that it would be inappropriate to go forward with the Geismar proceeding in light of the pending CN/IC Acquisition and the fact that CN, IC, and KCSR had recently entered into an access agreement that was contingent upon the Board's approval of the CN/IC Acquisition. The Board explained that this agreement would allow KCSR access to the Geismar area in the fall of 2000. The Board found that this alternative, by using existing track, would avoid the disruptive environmental consequences that would be involved in the construction of a new line. The Board also stated that there would be no need for KCSR to incur the costs of constructing the new line if the Board approves the CN/IC Acquisition. For these reasons, the Board found it appropriate to hold this construction proceeding in abeyance until the CN/IC Acquisition decision. Therefore, the construction project is no longer reasonably foreseeable. If the Board goes forward with its environmental review of the Geismar proceeding, the cumulative effects of this proposed CN/IC Acquisition would be addressed in the environmental document that the Board would prepare for the Geismar rail line.<sup>59</sup>

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<sup>59</sup> SEA notes that several railroads have filed Responsive Applications related to trackage rights access on the same IC rail line to Geismar. These Applications are discussed and evaluated in Chapter 3, "Project Description."

#### 6.4 Other Projects in Environmental Justice Communities

During preparation of the Draft Environmental Assessment, SEA consulted with the Environmental Protection Agency regarding the scope of cumulative impacts analysis. Based on this consultation, SEA determined that it would be appropriate to conduct additional research regarding the potential for cumulative impacts to occur in communities meeting the environmental justice population criteria and where the proposed acquisition activities would result in a high and adverse impact. (See Section 4.13 "Environmental Justice," for a description of SEA's methods for identifying environmental justice populations.)

SEA has identified the following communities with environmental justice populations and where high and adverse impacts would occur as a result of the proposed acquisition:

- Kankakee, Illinois.
- Champaign, Illinois.
- Monroeville, Illinois.
- Tuscola, Illinois.
- Du Quoin, Illinois.
- Cairo, Illinois.
- Mounds, Illinois.
- Centralia, Illinois.
- Carbondale, Illinois.
- Clinton, Kentucky.

SEA identified that, without mitigation, the proposed Acquisition would result in significant hazardous materials transport impacts in these communities. SEA contacted the city, county, state, and regional agencies in these communities to identify other projects or activities that, when combined with the impacts that would occur from the proposed acquisition, could result in cumulative impacts.

Table 6-3, "Summary of Cumulative Projects and Potential Environmental Effects," lists these communities and summarizes the projects and activities SEA identified in its analysis. Table 6-3 also summarizes SEA's analysis of the potential for cumulative impacts to occur.

SEA's preliminary recommended mitigation addresses any potential significant environmental effects resulting from Acquisition-related increases in hazardous materials traffic. SEA's additional mitigation for communities with potential disproportionately high and adverse impacts on environmental justice populations would further address unique needs in these communities. SEA concludes that the other local projects SEA identified would not result in additional, significant cumulative effects and additional mitigation is not warranted. See Section 4.2, "Hazardous Materials Transport Safety," for a complete discussion of hazardous materials transport impacts and mitigation. See Section 4.13, "Environmental Justice," for a complete discussion of SEA's evaluation of potential Acquisition-related effects on environmental justice populations.

**TABLE 6-3**  
**SUMMARY OF CUMULATIVE PROJECTS AND POTENTIAL ENVIRONMENTAL EFFECTS**

Community	Segment Number Change in: • trailers per day • Gross ton miles (GTM) • Haz. Mat. railcars	Environmental Effects Identified in Draft EA Hazardous Materials Transport	Cumulative Projects 7 residential subdivisions	Potential for Cumulative Effects Residential development would not contribute to the storage and handling of hazardous materials in the community.
Monroe, IL	Segment 187 + 7.14 trains per day + 76% GTM + 104% Haz. Mat.	Hazardous Materials Transport	New warehouse Large industrial development	Warehousing and industrial projects could result in additional storage of hazardous materials in the general area. However, environmental justice populations are not located near the area, and state and local regulations regarding the storage and handling of hazardous substances would reduce the potential for adverse cumulative effects.
Champaign, IL	Segment 303 + 5.72 trains per day + 62% GTM + 100% Haz. Mat.	Hazardous Materials Transport		
Segment 315 + 5.44 trains per day + 59% GTM + 104% Haz. Mat.				
Kankakee, IL	Segment 187 + 7.14 trains per day + 76% GTM + 104% Haz. Mat.	Hazardous Materials Transport	Removal of railroad depot Industrial corridor Warehouse construction	Warehousing and industrial projects could result in additional storage of hazardous materials in the general area. However, state and local regulations regarding the storage and handling of hazardous substances would reduce the potential for adverse cumulative effects.
Segment 190 + 7.14 trains per day + 71% GTM + 101% Haz. Mat.				
Tuscola, IL	Segment 315 + 5.44 trains per day + 59 GTM + 100% Haz. Mat.	Hazardous Materials Transport	Extension of Pleasant Run Road "New Iron Horse" subdivision	Residential development would not contribute to the storage and handling of hazardous materials in the community.
Chillicothe, KY	Segment 333 + 3.72 trains per day + 47% GTM + 118% Haz. Mat.	Hazardous Materials Transport	Low-clearance viaduct, which is in poor condition, limits EMS vehicle access to low-income neighborhoods.	The viaduct is a local highway responsibility that potentially limits access to the area. Applicants to consult with local officials regarding condition of the viaduct.

Notes: This table presents communities that identified projects and other activities which may contribute to cumulative impacts. Communities that did not identify projects or other activities are not included in the table. SEIA identified these communities, their projects and activities by contacting local planning department personnel.



## **6.5 OTHER LOCAL PROJECTS IDENTIFIED BY THE PUBLIC**

As part of the cumulative effects analysis, SEA will evaluate local projects or activities that relate to the proposed CN/IC Acquisition when communities, local, regional, state or Federal officials, or other interested parties provide information to the Board showing that analysis is warranted. To date, SEA has not received public comments regarding projects that could cause cumulative effects on the Draft EA. However, if SEA receives additional information during the public comment period on local projects that could have cumulative effects, SEA will evaluate these effects in the Final EA. The information provided to the Board must describe (1) the project or activity; (2) the interrelationship with the proposed CN/IC Acquisition and; (3) the type and severity of the potential environmental effects. SEA will then determine if there is enough potential for significant cumulative effects. Interested parties must provide information on other projects and activities to the Board within a sufficient period to allow for review and analysis within the schedule for preparing the Final EA.

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## **CHAPTER 7**

### **SAFETY INTEGRATION PLAN**

Chapter 7 presents an overview of the Surface Transportation Board's (Board) process for evaluating safety integration issues related to the proposed Canadian National/Illinois Central (CN/IC) Acquisition.

#### **7.1 BACKGROUND**

In its review of the recent Conrail transaction, the Board, for the first time in its history, required the Applicants to submit a detailed Safety Integration Plan describing the process by which the Applicants would combine and safely integrate the infrastructure, equipment, personnel, and operating practices of the different railroad companies if the Board approved the proposed Acquisition. The Board also entered into a Memorandum of Understanding (MOU) to establish an ongoing monitoring process during implementation of the Conrail Acquisition. The Board undertook a similar process for the proposed CN/IC Acquisition to assure adequate advance planning and to coordinate safety integration issues by both the Board and Federal Railroad Administration (FRA), the agency responsible for enforcement of railroad safety regulations.

The Board's procedural schedule required the Applicants to file a Safety Integration Plan by August 14, 1998.<sup>40</sup> The CN/IC Applicants developed a Safety Integration Plan within FRA guidelines and submitted the Plan on August 14, 1998. The Applicants subsequently worked with FRA to respond to their comments and refine the Safety Integration Plan. The Applicants then submitted an updated Plan on September 18, 1998, which includes the information in the original submittal and incorporates responses to FRA's initial informal comments.

On September 28, 1998, the Board entered into a MOU with FRA (with the concurrence of the U.S. Department of Transportation) that sets out the respective roles of the agencies in overseeing safety integration for the proposed CN/IC Acquisition. In accordance with the MOU, FRA submitted comments on the revised Safety Integration Plan on October 30, 1998. FRA indicates that the revised Safety Integration Plan is more complete than the original Plan, but it will require FRA's continued follow-up with the Applicants as part of the Board and FRA's ongoing Safety Integration Plan review process.

SEA is circulating the revised Safety Integration Plan (September 18, 1998), MOU, and FRA's comments with this Draft Environmental Assessment (Draft EA) to allow other agencies and the

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<sup>40</sup> Decision No. 6, August 14, 1998.

public to review and comment on the Safety Integration Plan. Appendix V, "Safety Integration Plan," contains the entire Safety Integration Plan, the MOU between the Board, FRA, DOT, and FRA's comments on the Safety Integration Plan.

If the proposed CN/IC Acquisition is approved, the SEA/FRA/DOT MOU establishes an ongoing safety integration monitoring process. This process would continue during the oversight period until FRA advises the Board in writing that the proposed integration has been safely completed. The monitoring process provides for the following actions:

- FRA would work with the Applicants to correct any inadequacies that FRA might identify in the Plan and to address safety integration issues that may arise subsequently.
- FRA would monitor, evaluate, and review the Applicants' progress in implementing the Plan.
- FRA could request the Board to exercise its oversight authority by asking the Applicants to correct deficiencies resulting from the Acquisition.
- If FRA informs the Board of a concern that may require Board action, FRA would provide sufficient information to the Board to identify the safety deficiency, describe the implications of the deficiency, and provide recommendations for correcting the deficiency.
- FRA would also report to the Board periodically regarding safety integration of the Acquisition, but not less than biannually. FRA's reporting would continue until FRA advises the Board in writing that the proposed integration has been safely implemented.

## 7.2 ISSUES IN THE SAFETY INTEGRATION PLAN

SEA has independently reviewed the Applicants' Safety Integration Plan, which they developed in accordance with the "Safety Implementation Guidelines" issued by FRA's Office of Safety on November 7, 1997. Those Guidelines identify the areas of possible public safety concern when Class I railroads propose to integrate their operations through a control transaction. Moreover, in preparing this Safety Integration Plan, CN/IC relied in part on the issues addressed in the Safety Integration Plans for the Conrail Acquisition. In addition, CN/IC based its revisions and modifications on continuing consultation with FRA about the CN/IC Safety Integration Plan.

The CN/IC Safety Integration Plan describes the Applicants' planned activities to safely integrate the two railroad systems. The Plan addresses the railroads' U.S. operating rules, train and crew dispatching, locomotive maintenance and repair, train and yard operations, and information systems. Each issue is briefly summarized below. The complete revised Safety Integration Plan, submitted by the Applicants on September 18, 1998, is included in Appendix V, "Safety Integration Plan." Chapter 4, "Environmental Consequences—Operational Changes," of this Draft EA addresses a number of traffic volume-related safety issues individually, particularly those issues involving hazardous materials transportation and passenger service.

**U.S. Operating Rules.** CN's U.S. divisions, Grand Trunk Western Railroad (GTW) and Duluth, Winnipeg & Pacific Railroad (DWP), have slightly different operating rules from each other and from IC. If the proposed Acquisition is approved, CN/IC plans early in the implementation period to adopt a single set of rules and practices for its U.S. operations and to review them with FRA.

**Train and Crew Dispatching.** IC has a modern dispatching and crew calling facility in its Homewood, Illinois operating headquarters. CN/IC plans to consolidate in phases the dispatching and crew calling operations of GTW and DWP with IC's operations at Homewood (i.e., initial relocation, consolidated rules integration, and technology upgrade). At each stage in the consolidation process, CN/IC would train affected employees and familiarize them with any new rule, territory, or system for which they would be responsible.

**Locomotive Maintenance and Repair.** IC also has a modern locomotive maintenance and repair facility at its Woodcrest shops in Homewood. CN/IC proposes to close GTW's Battle Creek, Michigan locomotive shop and consolidate high-horsepower locomotive repairs at IC's Woodcrest and Memphis shops, both of which have sufficient capacity. CN/IC would consolidate most low-horsepower locomotive repairs at GTW's Flint, Michigan shop. CN/IC would train affected employees in any local rules or processes with which they are unfamiliar.

**Train and Yard Operations.** Under the proposed transaction, most of the forecasted increases in train volume on CN/IC's lines would occur on IC's main line between Chicago, Illinois and Jackson, Mississippi. CN/IC would need additional train and engine service crews to handle the increased trains. Some of the yards on that line would also experience increases in traffic that require additional personnel (i.e., IC's Markham Yard in Chicago and its yards in Centralia and Champaign, Illinois and Memphis, Tennessee). CN/IC plans to fill those new jobs both with transfers and with new hires. Overall, the proposed Acquisition would result in a net increase in jobs for CN/IC's U.S. operations. CN/IC would train, qualify, and familiarize all personnel with the rules and operating practices governing the territory or facility in which they will work.

**Information Systems.** CN/IC would integrate information systems in phases over the Applicants' 3-year implementation period to permit movement tracking across the entire CN/IC system if the proposed Acquisition is approved. CN and IC have been addressing Year 2000 information system problems both independently and through joint planning. While the Applicants do not expect any Year 2000 problems in their respective systems, they have agreed to defer implementing any major systems integration resulting from the proposed Acquisition until after the Year 2000 to avoid unforeseen complications.

### **7.3 SEA'S CONCLUSIONS**

SEA's preliminary conclusion is that the Applicants' Safety Integration Plan, as revised to respond to FRA comments, along with the MOU and ongoing monitoring process, would adequately address public safety and the safe integration of the Applicants' post-Acquisition rail operations. To further ensure that the proposed integration is carried out safely, SEA's preliminary recommended mitigation includes requiring the Applicants to comply with the Safety

Integration Plan and to participate and fully cooperate with the ongoing regulatory activities associated with the safety integration process, as described in the MOU, until FRA affirms to the Board in writing that the integration of the Applicants' systems has been completed safely and satisfactorily. SEA believes that with these safeguards the Applicants could fully address safety integration issues.

#### **7.4 HOW TO COMMENT ON THE SAFETY INTEGRATION PLAN**

Interested parties can file comments on the Safety Integration Plan alone or combine comments addressing safety integration with others on the Draft EA. Persons submitting comments on the Draft EA, including those on the Safety Integration Plan, must do so within the 30-day comment period, which will close on December 11, 1998. When submitting written comments on the Safety Integration Plan, please be as specific as possible. To file comments, please send one original and ten copies to:

Office of the Secretary  
Case Control Unit  
STB Finance Docket No. 33556  
Surface Transportation Board  
1925 K Street, N.W.  
Washington, DC 20423-0001

Indicate in the lower left-hand corner:

Attention: Elaine K. Kaiser  
Environmental Project Director  
Environmental Filing

## **CHAPTER 8**

### **SEA'S PRELIMINARY RECOMMENDED ENVIRONMENTAL MITIGATION**

Chapter 8 presents the Section of Environmental Analysis' (SEA's) preliminary recommended environmental mitigation. The primary purpose of including SEA's recommendations in the Draft Environmental Assessment (EA) is to allow the public and agencies to comment on these recommendations. Based on public and agency comment, SEA will conduct additional environmental analysis, where necessary, and finalize its recommendations. The Final EA will contain SEA's final environmental recommendations for the Board to consider in its decision on the proposed CN/IC Acquisition. Chapter 8 has two sections: Section 8.1 presents SEA's approach to developing mitigation. Section 8.2 contains SEA's specific mitigation recommendations. During its environmental review, SEA identified potential significant impacts in only two areas:

- Hazardous Materials Transport.
- Environmental Justice.

In addition to SEA's preliminary mitigation for these issue areas, Chapter 8 also includes SEA's recommended mitigation to ensure that the Applicants apply construction best management practices to prevent any potential impacts from construction activities. It also includes mitigation requiring compliance with the ongoing safety integration process that FRA and the Board will oversee. With the mitigation described in this Chapter, SEA concludes that the proposed CN/IC Acquisition would not result in significant environmental effects.

#### **8.1 OVERVIEW OF SEA'S APPROACH TO MITIGATION**

During the environmental assessment process, the Surface Transportation Board (Board) has taken a "hard look" at the environmental consequences of the proposed Canadian National Railway Company/Illinois Central Corporation (CN/IC) Acquisition. In its environmental review, SEA conducted a thorough and comprehensive analysis of the potential environmental effects associated with the increases in rail activities CN and IC propose in their Application to the Board.

- Safety, including effects on freight rail operations, hazardous materials transport, passenger rail operations, highway/rail at-grade crossings, and emergency vehicle response delay.

- Transportation systems, including effects on delay at highway/rail at-grade crossings, traffic and roadway systems, passenger rail operations capacity, and navigation.
- Energy.
- Air quality.
- Noise.
- Environmental justice.
- Natural resources, including biological resources.
- Hazardous waste sites.
- Cultural and historic resources.
- Land use.
- Cumulative effects.

#### **8.1.1 Scope of the Board's Conditioning Power**

The Board has limited authority to impose conditions to mitigate potential environmental impacts. As a government agency, the Board can only impose conditions that are consistent with its statutory authority. Accordingly, any conditions the Board imposes must relate directly to the transaction it is licensing, must be reasonable, and must be supported by the record before the Board. Thus, the Board's practice consistently has been to mitigate only those impacts that result directly from the proposed action. The Board does not have authority to require mitigation of pre-existing conditions, such as existing railroad operations or land development in the vicinity of the railroads.

As an alternative to the mitigation that the Board would unilaterally impose on CN (notwithstanding mitigation required by other Federal regulatory agencies that may have jurisdiction over potentially affected resources), SEA strongly encourages the railroads and affected parties to negotiate mutually acceptable agreements. The Board could then impose compliance with the terms of any mutually acceptable binding agreement as an environmental condition in any decision approving the proposed CN/IC Acquisition. These negotiated agreements would supersede any of SEA's recommended mitigation. SEA also encourages CN to develop voluntary mitigation to address potential impacts. For example, SEA notes that CN has offered its TransCAER® program to address hazardous materials transport issues. (See Appendix P, "Voluntary Railroad Mitigation Plans.")



### **8.1.2 Preliminary Nature of Mitigation**

SEA emphasizes that the recommended mitigation measures in this Draft EA are preliminary, and it invites public and agency comment on these proposed mitigation measures as well as alternative mitigation. In order for SEA to effectively assess the comments, it is critical that the public be specific regarding desired mitigation and the reasons why the suggested mitigation would be appropriate. In addition, SEA requests that the railroads, communities, and other interested parties advise SEA of the status of any negotiations to address environmental concerns. If the parties execute a mutually acceptable binding agreement, they should immediately advise SEA in writing. SEA requests that the Applicants report on the results of these consultations to SEA by the close of the public comment period for the Draft EA.

SEA will make its final recommendations for mitigation to the Board in the Final EA after considering all public comments on the Draft EA, conducting further environmental analysis and agency consultations, and conducting site visits as appropriate. The Board will make its decision regarding this project and any conditions it might impose, including environmental conditions, based upon its consideration of the public comments, the Draft EA, and the Final EA. In considering whether to approve the proposed Acquisition, the Board must weigh the anticipated public benefits to the national transportation system, interstate commerce, and affected regions and communities against potential adverse effects.

### **8.1.3 Safety Integration**

Safety is of paramount importance to the Board. In addition to the mitigation in this Draft EA, which addresses the safety impacts associated with the transport of hazardous materials, the Board directed the Applicants to prepare a Safety Integration Plan that specifically addresses the process of safely combining the two separate systems. The Federal Railroad Administration (FRA) has reviewed and commented on the Plan, and the Applicants have revised it to address FRA concerns. The Board and FRA have entered into a Memorandum of Understanding, with the concurrence of the U.S. Department of Transportation, that outlines the processes for ensuring that the Plan is implemented, how potential issues will be addressed, and how and when FRA will provide status reports to the Board.

To facilitate public review of this important issue, this Draft EA provides the complete Safety Integration Plan in Appendix V with a copy of the Memorandum Of Understanding and FRA's comments on the Safety Integration Plan. SEA encourages the public to review this Plan carefully and comment on its sufficiency. As with the Draft EA, commentors must submit comments on the Safety Integration Plan to SEA no later than the end of the 30-day comment period. SEA will fully consider these comments in preparing the Final EA, which will contain SEA's final safety recommendations.

## 8.2 PRELIMINARY RECOMMENDED MITIGATION MEASURES

Based on its independent environmental analysis, consideration of the available information, and agency consultation, SEA's preliminary recommendation is that the Board impose, as conditions to any decision approving the proposed CN/IC Acquisition, the following environmental mitigation measures. Table 8-1, "Preliminary Recommended Mitigation by State," identifies the recommended mitigation measures for each state. Additional tables follow specific preliminary mitigation measures to identify the rail line segments to which the recommended mitigation measures apply.

**TABLE 8-1  
PRELIMINARY RECOMMENDED MITIGATION BY STATE**

State	Preliminary Recommended Mitigation Condition
Alabama	1, 12, 13, 14
Illinois	1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14
Iowa	1, 12, 13, 14
Kentucky	1, 3, 4, 5, 6, 12, 13, 14
Louisiana	1, 12, 13, 14
Michigan	1, 2, 12, 13, 14
Minnesota	1, 12, 13, 14
Mississippi	1, 10, 11, 12, 13, 14
Tennessee	1, 12, 13, 14

### SAFETY: HAZARDOUS MATERIALS TRANSPORT CONDITIONS

#### Condition 1.

Applicants shall comply with the current Association of American Railroads (AAR) "key train" guidelines and any subsequent revisions. (See "Recommended Railroad Operating Practices for Transportation of Hazardous Materials," AAR Circular No. OT-55-B.)

AAR guidelines define key trains as any trains with five or more tank carloads of chemicals classified as a poison inhalation hazard, or any train with a total of 20 rail cars with any combination of poison inhalation hazards, flammable gases, explosives, or environmentally sensitive chemicals. AAR key train guidelines include measures for a maximum operating speed of 50 miles per hour and full train inspections by the train crew whenever a train is stopped by an emergency application of the train air brake or following the report of a defect by a wayside defect detector.

**Condition 2.**

The Applicants shall continue to manage the four rail line segments listed in Table 8-2, "Rail Line Segments that Warrant Hazardous Materials (Key Route) Mitigation," as Key Routes for a period of at least 3 years from the effective date of the Board's decision. The Applicants shall certify to the Board compliance with AAR's Key Route guidelines on these rail line segments. (See "Recommended Railroad Operating Practices for Transportation of Hazardous Materials," AAR Circular No. OT-55-B.)

**TABLE 8-2  
RAIL LINE SEGMENTS THAT WARRANT  
HAZARDOUS MATERIALS (KEY ROUTE) MITIGATION**

Route and Segment(s)	Length (miles)	Rail Line Segment ID
Detroit Intermodal, MI to Mai Junction, MI	14.6	1222
Mai Junction, MI to Pontiac, MI	0.9	1225
Pontiac, MI to West Pontiac, MI	2.2	1230
West Pontiac, MI to Durand, MI	38.3	1235

**Condition 3.**

Applicants shall distribute a copy of Applicants' current hazardous materials emergency response plans to each local emergency response organization or coordinating body in the communities along the four Key Route rail line segments listed in Condition 2 and the ten Major Key Routes rail line segments listed in Condition 4. Applicants shall certify to the Board compliance with this condition within 6 months of the effective date of the Board's decision. In addition, Applicants shall distribute the hazardous materials emergency response plans at least once every 3 years during the Board's oversight period or whenever Applicants materially change them in a manner that affects the Applicants' coordination with the local emergency response organizations.

**Condition 4.**

The Applicants shall work with each local emergency response organization or coordinating body in the communities along the ten rail line segments listed in Table 8-3, "Rail Line Segments that Warrant Hazardous Materials Emergency Response (Major Key Route) Mitigation," to develop a local hazardous materials emergency response plan, to be implemented in coordination with Applicants' hazardous materials emergency response plans. The individual plans shall be consistent with the National Response Team Guidance documents NRT-1 (*Planning Guide*), NRT-1A (*Criteria for Plan Review*), and the U.S. Environmental Protection Agency's *Technical Guidance for Hazardous Analysis* or other

equivalent documents that are used by the affected community's local emergency response organization or coordinating body. Applicants shall certify to the Board compliance with this condition within 1 year of the effective date of the Board's final decision.

**TABLE 8-3**  
**RAIL LINE SEGMENTS THAT WARRANT HAZARDOUS MATERIALS**  
**EMERGENCY RESPONSE (MAJOR KEY ROUTE) MITIGATION**

Route and Segment(s)	Length (miles)	Rail Line Segment ID
Matteson (EJE), IL to Kankakee, IL	26.6	187
Kankakee, IL to Otto, IL	5.2	190
Otto, IL to Gilman, IL	20.6	205
Gilman, IL to Champaign, IL	46.3	305
Champaign, IL to Mazon, IL	45.1	315
Edgewood, IL to Centralia, IL	37.3	360
Centralia, IL to Renlakhmine, IL	23.5	365
Renlakhmine, IL to Du Quoin, IL	11.7	370
Carbondale, IL to Cairo, IL	54.4	380
Cairo, IL to Fulton, KY	43.5	385

**Condition 5.**

Applicants shall implement a simulation emergency response drill or training session with the voluntary participation of local emergency response committees or coordinating bodies in affected communities along each Major Key Route identified in Condition No. 4. Applicants shall certify to the Board compliance with this condition within 2 years of the effective date of the Board's final decision.

**Condition 6.**

Applicants shall provide dedicated toll-free telephone numbers to the emergency response organizations or coordinating bodies responsible for each community located along the four rail line segments identified in Condition No. 2 and the ten rail line segments identified in Condition No. 4. These telephone numbers shall provide access to personnel at the Applicants' dispatch centers 24 hours per day, 7 days per week, where local emergency response personnel can quickly obtain and provide information regarding the transport of hazardous materials on a given train and appropriate emergency response procedures in the event of a train accident or hazardous materials release. Applicants need not

provide these telephone numbers to the public. Applicants shall certify to the Board that they have complied with this condition before increasing hazardous materials traffic on these rail line segments as a result of the proposed CN/IC Acquisition.

## ENVIRONMENTAL JUSTICE CONDITIONS

### Condition 7.

Applicants shall, with the advice and consideration of the responsible local government, adapt and modify the local component of its required hazardous materials emergency response plan to account for the special needs of minority and low-income populations adjacent to or in the immediate vicinity of its rail line segment(s) in the communities listed in Table 8-4, "Communities that Warrant Tailored Hazardous Materials Emergency Response Mitigation." Applicants shall certify compliance with this condition within 1 year of the effective date of the Board's decision.

**TABLE 8-4  
COMMUNITIES THAT WARRANT TAILORED HAZARDOUS MATERIALS  
EMERGENCY RESPONSE MITIGATION**

Community, State	Route and Segment(s)	Rail Line Segment ID
Cairo, IL	Carbondale, IL to Cairo, IL	380
	Cairo, IL to Fulton, KY	385
Carbondale, IL	Carbondale, IL to Cairo, IL	380
Centralia, IL	Edgewood, IL to Centralia, IL	360
	Centralia, IL to Rentokmine, IL	365
Du Quoin, IL	Rentokmine, IL to Du Quoin, IL	370
Mounds, IL	Carbondale, IL to Cairo, IL	380

### Condition 8.

Applicants shall provide any necessary training at the local emergency response center serving minority and low-income populations adjacent to or in the immediate vicinity of Applicants' rail line segment(s) in the communities listed in Condition No. 8. Applicants shall certify compliance with this condition within 1 year of the effective date of the Board's decision.

### Condition 9.

As agreed to by the Applicants, the Applicants shall fund participation in a training session at AAR's Transportation Technology Center in Pueblo, Colorado, for two representatives of

the emergency response organizations for each of the communities listed in Condition No. 8.

## **CONSTRUCTION CONDITIONS**

- Condition 10.** For all proposed CN/IC Acquisition-related constructions, Applicants shall employ the Best Management Practices presented in Exhibit 8-A, "Best Management Practices for Construction Activities."
- Condition 11.** For all proposed CN/IC Acquisition-related construction activities, Applicants shall comply with the Federal, state, and/or local regulations listed below, which have particular applicability in mitigating potential environmental impacts:

### **Hazardous and Solid Waste Handling**

- a) Applicants shall observe all applicable Federal, state, and local regulations regarding the handling and disposal of any waste materials, including hazardous waste, encountered or generated during construction activities. In the event of a hazardous waste spill resulting from proposed construction activities, Applicants shall implement the appropriate emergency response and notification procedures and the appropriate remediation measures as required by applicable Federal, state, and local regulations.
- b) Applicants shall transport all hazardous materials generated by any proposed construction activities in compliance with the U.S. Department of Transportation Hazardous Materials Regulations (49 CFR Parts 171 to 179).
- c) Applicants shall dispose of all materials that cannot be reused in accordance with applicable Federal, state, and local solid waste management regulations.

### **Dust Control**

- d) Applicants shall comply with all applicable Federal, state, and local regulations to control and minimize fugitive dust emissions resulting from construction activities. Compliance may involve the use of such control methods as spraying water, installing wind barriers, or providing chemical treatment.

**Water Resources Protection**

- e) Applicants shall obtain all necessary Federal, state, and local permits for the alteration of wetlands, ponds, lakes, streams, or rivers, or if a likelihood exists for construction activities to cause soil or other materials to enter into these water resources. Applicants also shall use Best Management Practices to minimize other potential environmental impacts on water bodies, wetlands, and navigation (see Attachment 8-A, "Best Management Practices for Environmental Conditions No. 7 and 8").

**Stormwater Discharge**

- f) Applicants shall obtain all necessary Federal, state, and local permits for stormwater discharge, including National Pollutant Discharge Elimination System permits, during construction activities.

**Use of Herbicides**

- g) Applicants shall use only Environmental Protection Agency-approved herbicides and qualified personnel or contractors for application of right-of-way maintenance herbicides and shall limit such applications to the extent necessary for rail operations.

**SAFETY INTEGRATION CONDITIONS**

- |                      |  |
|----------------------|--|
| <b>Condition 12.</b> | Applicants shall comply with the Safety Integration Plan, which may be modified and updated as necessary to respond to evolving conditions.  |
| <b>Condition 13.</b> | Applicants shall participate and fully cooperate with the ongoing regulatory activities associated with the safety integration process, as described in the Memorandum of Understanding agreed to by the Board and FRA, with the concurrence of the U.S. Department of Transportation, until FRA affirms to the Board in writing that the integration of Applicants' systems has been completed safely and satisfactorily. |

**MONITORING AND ENFORCEMENT CONDITION**

**Condition 14**

If there is a material change in the facts or circumstances upon which the Board relied in imposing specific environmental mitigation conditions in this Decision, and upon petition by any party who demonstrates such material changes, the Board may review the continuing applicability of its final mitigation, if warranted.



**ATTACHMENT 8-A**  
**Best Management Practices for**  
**Construction Activities**

1. Applicants shall restore any adjacent properties disturbed during right-of-way construction or abandonment-related activities to pre-construction or pre-abandonment conditions.
2. Applicants shall encourage regrowth in disturbed areas and stabilize disturbed soils according to standard construction practices or as required by construction permits.
3. Applicants shall use appropriate signs and barricades to control traffic disruptions during construction or abandonment-related activities at or near any highway/rail at-grade crossings.
4. Applicants shall restore roads disturbed during construction or abandonment-related activities to conditions required by state and local jurisdictions.
5. Applicants shall control temporary noise from construction or abandonment-related equipment through the use of work-hour controls, operation and maintenance of muffler systems on machinery, and/or other noise reduction methods.
6. If Applicants find previously unknown archeological remains during construction or abandonment-related activities, they shall immediately cease excavation work in the area and contact the appropriate State Historic Preservation Office for guidance and coordination.
7. Applicants shall use appropriate technologies, such as silt screens and straw bale dikes, to minimize soil erosion, sedimentation, runoff, and surface instability during construction or abandonment-related activities. Applicants shall disturb the smallest area possible around any streams and tributaries and shall consult with the appropriate state agent to properly revegetate disturbed areas immediately following construction or abandonment-related activities.
8. Applicants shall ensure that all culverts are clear of debris to avoid potential flooding and stream flow alteration.
9. Applicants shall design and construct proposed construction/abandonment activities so as to preserve effective drainage to maintain the quality of adjacent prime farmland.
10. Applicants shall use appropriate techniques to minimize potential environmental impacts on water bodies, wetlands, and navigation, including the following specific measures:
  - a) If necessary, Applicants shall avoid impacts or losses to wetlands wherever possible. If wetland impacts are unavoidable, Applicants must demonstrate that there are no practicable alternatives available that would avoid or further

minimize impacts to wetlands. Applicants shall compensate for unavoidable wetland losses at ratios determined by the U.S. Army Corps of Engineers and U.S. Fish and Wildlife Service as to type of wetland affected on a site-by-site basis.

- b) If necessary, Applicants shall design and replicate compensatory wetlands to match as closely as possible the specific mix of types, functions, and values of the affected wetlands. The compensatory wetlands shall be established via the process of restoration to the extent feasible, and they shall be located in an area as close as practicable to the affected wetlands.
- 11. Applicants shall ensure that abandonment-related activities are designed to preserve land forms and drainage patterns that may provide flood protection.
- 12. Applicants shall ensure that for any construction project, new lighting fixtures installed in new parking and security areas adjacent to residential zoned areas shall be cut off or shielded to avoid effects to residences.
- 13. Applicants shall compensate for trees removed during project activities. Applicants shall replace trees with native saplings, if practicable, at a minimum ratio of 1:1, and replacement shall occur as close as possible to the affected areas.
- 14. Applicants shall establish a staging area for construction equipment in environmentally nonsensitive areas to control erosion and spills.
- 15. Should project activities affect previously unidentified threatened or endangered species and/or their habitat, Applicants shall immediately cease project activities and contact the U.S. Fish and Wildlife Service and the appropriate State Department of Natural Resources for guidance and coordination.
- 16. Applicants shall use established standards for recycling or reuse of construction materials such as ballast and rail ties. When recycling construction materials is not a viable option, Applicants shall specify disposal methods of materials such as rail ties and potentially contaminated surrounding soils and ballast materials to ensure compliance with applicable solid and hazardous waste regulations.
- 17. Applicants shall develop a vibration specification for any proposed construction activities associated with the proposed CN/IC Acquisition that involve pile driving, major excavation, or demolition.

## **LIST OF PREPARERS**

### **SURFACE TRANSPORTATION BOARD SECTION OF ENVIRONMENTAL ANALYSIS**

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## **GLOSSARY OF TERMS**

<b>abandonment:</b>	The discontinuance of service on a rail line segment, with no intention of resuming that service.
<b>Acquisition:</b>	The proposal by CN and IC for CN to acquire control of IC's assets and its basic railroad operations.
<b>active warning devices:</b>	Traffic control devices that give positive notice to highway users of the approach or presence of a train. These devices may include a flashing red light signal (a device which, when activated, displays red lights flashing alternately), a bell (a device which, when activated, provides an audible warning, usually used with a flashing red light signal), automatic gates (a mechanism added to flashing red light signals to provide a cantilevered arm that can lower across the lanes of the roadway equipped with flashing red light signals and extending over one or more lanes of traffic).
<b>adverse environmental impact:</b>	A negative effect, resulting from the implementation of a proposed action, that serves to degrade or diminish an aspect of human or natural resources.
<b>Advisory Council on Historic Preservation (ACHP):</b>	An independent Federal agency charged with advising the President and Congress on historic preservation matters and administering the provisions of Section 106 of the National Historic Preservation Act.

<b>Applicants:</b>	Canadian National Railway Company (and subsidiaries Grand Trunk Corporation and Grand Western Railroad Incorporated) and Illinois Central Corporation (and subsidiaries Illinois Central Railroad Company; Chicago, Central & Pacific Railroad Company; and Cedar River Railroad Company).
<b>Application:</b>	A formal filing with the Surface Transportation Board related to certain railroad transactions such as railroad mergers, acquisitions, constructions, or abandonments. For the proposed CN/IC Acquisition, applications may be either Primary Applications or Inconsistent and Responsive (IR) Applications. See <i>Primary Application</i> and <i>Inconsistent and Responsive (IR) Application</i> .
<b>attainment area:</b>	An area that EPA has classified as complying with the National Ambient Air Quality Standards specified under the Clean Air Act.
<b>bad order cars:</b>	Rail cars that fail routine inspections.
<b>bad order support tracks:</b>	Tracks used to store bad order cars until they can be repaired.
<b>ballast:</b>	The portion of the track bed that lies below the railroad ties and consists of crushed stone or other material.
<b>Best Management Practice (BMP):</b>	Technique that various parties (e.g., the construction industry) use to provide protection from adverse impacts to the environment. The Board may designate these techniques as mitigation measures.

<b>block:</b>	(1) A defined length of track, with defined limits, on which operators govern train movements. (2) A group of freight cars handled as one unit for a portion or all of their journey from origin to destination.
<b>block swapping:</b>	The process of moving groups of rail cars with a common destination (called "blocks") from one train to another.
<b>blocking:</b>	The process of aggregating freight cars into blocks.
<b>blocking pattern:</b>	The assignment of a specific freight car to a specific block.
<b>Board:</b>	The Surface Transportation Board, the licensing agency for the proposed CN/IC Acquisition.
<b>bulletins:</b>	Documents addressed to train crews and other operating employees specifying temporary or local operating rules and restrictions.
<b>Census block group:</b>	The smallest geographic unit for which the U.S. Census provides information on racial background, ethnic heritage, and household income.
<b>Class I railroad:</b>	As defined by the Board, any railroad with average annual operating revenue of \$255.9 million or more.

<b>Clean Air Act (Clean Air Act Amendments):</b>	The Clean Air Act of 1970 and the subsequent amendments, including the Clean Air Act Amendments of 1990 (42 U.S.C. 7401-7671g); the primary Federal law that protects the nation's air resources. This act establishes a comprehensive set of standards, planning processes, and requirements to address air pollution problems and reduce emissions from major sources of pollutants.
<b>Clean Water Act:</b>	<p>The Federal Water Pollution Control Act Amendments of 1972 (33 U.S.C. 1251 <i>et seq.</i>) is the primary Federal law that protects the nation's waters, including lakes, rivers, aquifers, and coastal areas. This act provides a comprehensive framework of standards, technical tools, and financial assistance to address the many causes of pollution and poor water quality, including municipal and industrial wastewater discharges, polluted runoff from urban and rural areas, and habitat destruction. Specifically, the Clean Water Act provides for the following:</p> <ul style="list-style-type: none"><li>• Requires major industries to meet performance standards to ensure pollution control.</li><li>• Charges states and tribes with setting specific water quality standards appropriate for their waters and developing pollution control programs to meet them.</li><li>• Provides funding to states and communities to help them meet their clean water infrastructure needs.</li><li>• Protects valuable wetlands and other aquatic habitats through a permitting process that conducts land development activities and other activities in an environmentally sound manner.</li></ul>
<b>common corridor:</b>	An area in which passenger and freight rail lines run on adjacent parallel lines.

<b>Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA):</b>	The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9601-9675; P.L. 96-510); the Federal act that provides EPA with the authority to clean up inactive hazardous waste sites and distribute the cleanup costs among the parties who generated and/or handled the hazardous substances at these sites.
<b>Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS):</b>	Federal database containing information on potential hazardous waste sites that states, municipalities, private companies, and private persons have reported to the EPA, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act. This database contains sites that are either currently on, or proposed for inclusion on, the National Priorities List (NPL) and sites that are in the screening and assessment phase for possible inclusion on the NPL.
<b>condition:</b>	A provision that the Board imposes as part of any decision approving the proposed CN/IC Acquisition and that requires action by one or more of the Applicants.
<b>control boxes:</b>	Structures at highway/rail at-grade crossings that house the electronics and apparatus that control the warning devices at the crossing.
<b>Council on Environmental Quality (CEQ):</b>	Federal agency responsible for developing regulations and guidance for agencies implementing the National Environmental Policy Act.
<b>crew caller:</b>	Term applied to a railroad employee who is responsible for notifying train crews when and where to report for duty.
<b>crew calling:</b>	Process of notifying train crew members when and where their next tour-of-duty will start. Labor agreements commonly specify that railroads call train crews a minimum of 2 hours before crew members are required to begin their tour-of-duty.

<b>criteria of significance:</b>	The criteria SEA developed to determine whether a potential adverse environmental effect is significant and may warrant mitigation.
<b>critical habitat:</b>	The specific sites within the geographical area occupied by threatened or endangered species that include the physical or biological features essential to the conservation of the species. These areas may require special management considerations or protection. These areas include specific sites outside the geographical areas occupied by the species at the time of the listing that are essential for the conservation of the species.
<b>cultural resource:</b>	Any prehistoric or historic district, site, building, structure, or object that warrants consideration for inclusion in the National Register of Historic Places. A cultural resource that is listed in or is eligible for listing in the National Register of Historic Places is considered a historic property (or a significant cultural resource). For the purposes of this Draft EA, the term applies to any resource more than 50 years old for which SEA gathered information to evaluate its significance.
<b>cumulative effects:</b>	Effects resulting from the incremental impacts of the proposed CN/IC Acquisition when added to other past, present, and reasonably foreseeable future actions, regardless of which agency (Federal or non-Federal) or person undertakes such actions, as described in 40 CFR 1508.7. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.
<b>Day 1:</b>	In the event that the Board approves the proposed CN/IC Acquisition, the date (as the Applicants determine through mutual agreement) when operating responsibility for the acquired railroad is transferred to the Applicants' organization.

<b>decibel (dB):</b>	A unit of noise measured on a logarithmic scale that compresses the range of sound pressures audible to the human ear over a range from 0 to 140, where 0 decibels represents sound pressure corresponding to the threshold of human hearing, and 140 decibels corresponds to a sound pressure at which pain occurs. Noise analysts measure sound pressure levels that people hear in decibels, much like other analysts measure linear distances in yards or meters. A-weighted decibel (dBA) refers to a weighting that accounts for the various frequency components in a way that corresponds to human hearing.
<b>degradation:</b>	Changes to a habitat, either terrestrial or aquatic, so that it no longer meets the survival needs of a particular species of plant or wildlife. Such change could include reducing the feeding area, modifying the vegetation type, and limiting the available shelter.
<b>dispatcher (train):</b>	The railroad operating employee responsible for issuing on-track movement and/or occupancy authority through the use of remotely controlled switches, signals, visual displays, voice control written mandatory directives, and/or all of the above.
<b>double-stack freight service:</b>	The transport of two intermodal containers stacked on top of each other on one platform of an intermodal rail flat car.
<b>emissions:</b>	Air pollutants that enter the atmosphere.
<b>Environmental Assessment (EA):</b>	A document that the CEQ regulations implementing the National Environmental Policy Act requires Federal agencies to prepare for major projects or legislative proposals having the potential to significantly affect the environment. A tool for decision-making, it describes the positive and negative environmental effects of the undertaking and alternative actions and measures to eliminate potentially significant environmental impacts.

**Environmental Justice (EJ):**

For purposes of this document, SEA defines environmental justice as the mission discussed in Executive Order (EO) 12898 "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" (59 FR 7629, February 11, 1994). This EO directs Federal agencies to identify and address "disproportionately high and adverse human health or environmental effects" of their programs, policies, and activities on minority and low-income populations in the United States. EO 12898 also calls for public notification for environmental justice populations, as well as meaningful public participation of environmental justice populations. In this document, SEA used the guidance provided in the Department of Transportation Order on Environmental Justice, the Council of Environmental Quality, Environmental Justice Guidance under the National Environmental Policy Act, and the Interim Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA analysis to analyze potential disproportionately high and adverse impacts on environmental justice populations for rail segments, intermodal facilities, rail yards, and new construction.

**Environmental Justice (EJ) population:**

A population within an Area of Potential Effect whose minority and low-income composition meets at least one of the following criteria: (1) the percentage of minority and low-income population in the Area of Potential Effect is greater than 50 percent of the total population in the Area of Potential Effect, or (2) the percentage of minority and low-income population in the Area of Potential Effect is at least ten percentage points greater than the percentage of minority or low-income population in the county of which the Area of Potential Effect is a part.

**Environmental Resource Score (ERS):**

The impact score determined for an environmental resource category within a (block group) area of potential effect. A typical ERS ranges from 0 to 6, reflecting the relative impact on the Area of Potential Effect compared with impacts on other Areas of Potential Effect. For the Environmental Justice analysis, SEA calculated an ERS for noise, hazardous materials transport, and traffic safety and delay.



<b>equipment:</b>	For a railroad, a term used to refer to the mobile assets of the railroad, such as locomotives, freight cars, and on-track maintenance machines. Also used more narrowly as a collective term for freight cars operated by this railroad.
<b>Executive Order (EO) 12898:</b>	Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority and Low-Income Populations," issued in February of 1994, directs Federal agencies to identify and address as appropriate "disproportionately high and adverse human health or environmental effects," including interrelated social and economic effects of their programs, policies, and activities on minority populations and low-income populations in the United States.
<b>floodplain:</b>	The lowlands adjoining inland and coastal waters and relatively flat areas and flood-prone areas of offshore islands, including, at a minimum, those areas that have a 1 percent or greater chance of flood in any given year (also known as a 100-year or a Zone A floodplain).
<b>fugitive dust:</b>	According to EPA regulations, those particulate matter emissions that could not "reasonably pass" through a stack, chimney, vent, or other functionally equivalent opening. Examples of fugitive dust include windborne particulate matter from earth-moving and material handling during construction activities.
<b>Geographic Information System (GIS):</b>	A computer system for storing, retrieving, manipulating, analyzing, and displaying geographic data. GIS combines mapping and databases.
<b>grade crossing:</b>	<i>See highway/rail at-grade crossing.</i>
<b>grade separation:</b>	<i>See separated grade crossing.</i>

<b>gross ton-mile:</b>	A measure of railroad production that represents the weight of cars and freight movement in terms of total tons per mile transported system-wide or over a specific rail line segment. Specifically, 1 ton of railroad car and loading carried 1 mile.
<b>haulage right(s):</b>	The limited right (or combination of limited rights) of one railroad to have its freight traffic moved by another railroad over the designated lines of the other railroad.
<b>hazardous materials:</b>	Substances or materials that the Secretary of Transportation has determined are capable of posing an unreasonable risk to human health, safety, and property when transported in commerce, as designated under 49 CFR Parts 172 and 173.
<b>hazardous wastes:</b>	Waste materials that, by their nature, are inherently dangerous to handle or dispose of (e.g., old explosives, radioactive materials, some chemicals, some biological wastes). Usually, industrial operations produce these waste materials.
<b>highway/rail at-grade crossing:</b>	The general area of an intersection of a public or private road and a railroad where the intersecting rail and highway traffic are at the same level.
<b>historic property:</b>	Any prehistoric or historic district, site, building, structure, or object included in or eligible for inclusion in the National Register of Historic Places (NRHP). The term "eligible for inclusion in the NRHP" pertains to both properties that the Secretary of the Interior has formally determined to be eligible and to all other properties that meet NRHP listing criteria.
<b>horn noise (train):</b>	Noise that occurs when locomotives sound warning horns in the vicinity of highway/rail at-grade crossings.

<b>hours-of-service regulations:</b>	Federal Hours of Service Law, which the Federal Railroad Administration enforces, governing maximum shift lengths and minimum rest periods for railroad operating employees. These employees include train crew, train dispatchers, and signal maintainers, as well as mechanical employees who move equipment for the purpose of test and inspection.
<b>Inconsistent and Responsive (IR) Application:</b>	Proposal to the Surface Transportation Board that Parties of Record submitted prior to October 21, 1997, requesting modifications of, or alternatives to, the proposed CN/IC Acquisition.
<b>Indian tribe:</b>	According to Indian Self-Determination and Education Assistance Act (25 U.S.C. 450-458; P.L. 93-638), any Indian tribe, band, nation, or other organized group or community recognized as eligible for the special programs and services that the United States provides to Indians because of their status as Indians.
<b>interchange point:</b>	Point at which two or more railroads join to exchange freight traffic.
<b>interlocking:</b>	An arrangement of switch, lock, and signal devices that is located where rail tracks cross, join, or separate. The devices are interconnected in such a way that their movements must succeed each other in a predetermined order, thereby preventing opposing or conflicting movements.
<b>intermodal facility:</b>	A site consisting of tracks, lifting equipment, paved and/or unpaved areas, and a control point for the transfer (receiving, loading, unloading, and dispatching) of trailers and containers between rail and highway, or between rail and marine modes of transportation.

<b>Key Route:</b>	For the purposes of this Draft EA, a rail line segment that carries an annual volume of 10,000 or more carloads of hazardous material.
<b>key train:</b>	Any train with five or more tank carloads of chemicals classified as a Poison Inhalation Hazard (PIH) or with a total of 20 rail cars with any combination of PIHs, flammable gases, explosives, or environmentally sensitive chemicals.
<b><math>L_{dn}</math>:</b>	The day-night average noise sound level, which is the receptor's cumulative noise exposure from all noise events over a full 24 hours. This is adjusted to account for the perception that noise at night is more bothersome than the same noise during the day.
<b>left-hand turnout:</b>	<i>See turnout.</i>
<b>Level of Service (LOS):</b>	A degree of peak congestion experienced by a roadway vehicle traffic stream using procedures that consider factors such as vehicle delay, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. Traffic analysts express LOS as letter grades, ranging from Level of Service A (free flowing) to Level of Service F (severely congested); they measure LOS by the average delay for all vehicles. Specifically, Level of Service A describes operations with very low delay (less than 5.0 seconds per vehicle); Level of Service B describes operations with delay in the range of 5.1 to 15.0 seconds per vehicle; Level of Service C describes operations with delay in the range of 15.1 to 25.0 seconds per vehicle; Level of Service D describes operations with delay in the range of 25.1 to 40.0 seconds per vehicle; Level of Service E describes operations with delay in the range of 40.1 to 60.0 seconds per vehicle; and Level of Service F describes operations with delay in excess of 60.0 seconds per vehicle.

<b>low-income population:</b>	A population composed of persons whose median household income is below the Department of Health and Human Services poverty guidelines.
<b>mainline:</b>	Railroad line that through trains use between terminals.
<b>maintenance area:</b>	An area classified by EPA as meeting National Ambient Air Quality Standards (NAAQS) and which previously (within the last 10 years before reclassification) did not meet NAAQS.
<b>Major Key Route:</b>	For the purposes of this Draft EA, a rail line segment where the annual volume of hazardous material it carries is projected to double and also exceed 20,000 carloads as a result of the proposed CN/IC Acquisition.
<b>minority population:</b>	A population composed of persons who are Black (non-Hispanic), Hispanic, Asian American, American Indian, or Alaskan Native.
<b>mitigation:</b>	An action taken to prevent, reduce, or eliminate adverse environmental effects.
<b>motive power:</b>	Locomotives operated by the railroad.
<b>multi-level rail car:</b>	A two- or three-level freight car, designed for transporting automotive vehicles.
<b>Multiple Resource Score (MRS):</b>	For the Environmental Justice analysis, a measure of aggregate impacts used to identify the geographic areas of greatest concern. This score sums the environmental resource scores for hazardous materials transport, noise, and traffic safety and delay and forms the basis for the tests for disproportionality.

<b>National Ambient Air Quality Standards (NAAQS):</b>	Air pollutant concentration limits established by the EPA for the protection of human health, structures, and the natural environment.
<b>National Environmental Policy Act (NEPA):</b>	The National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321-4347; P.L. 91-190) is the basic national charter for the protection of the environment. It establishes policy, sets goals, and provides means for carrying out the policy. Its purpose is to provide for the establishment of a Council on Environmental Quality and to instruct Federal agencies on what they must do to comply with the procedures and achieve the goals of NEPA.
<b>National Historic Preservation Act (NHPA):</b>	The National Historic Preservation Act of 1966, as amended (16 U.S.C. 470-470 <i>et seq.</i> ; P.L. 89-665), is the basic legislation of the Nation's historic preservation program that established the Advisory Council on Historic Preservation and the Section 106 review process. Section 106 of the NHPA requires every Federal agency to "take into account" the effects of its undertakings on historic properties.
<b>National Priorities List (NPL):</b>	A subset of CERCLIS; EPA's list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under the Superfund Program.
<b>National Register of Historic Places (NRHP):</b>	Administered by the National Park Service, the Nation's master inventory of known historic properties, including buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archeological, or cultural significance at the Federal, state, and local levels.
<b>Native American:</b>	According to the Native American Graves Protection and Repatriation Act of 1990, as amended (25 U.S.C. 3001 <i>et seq.</i> ; P.L. 101-601), of or relating to a tribe, people, or culture that is indigenous to the United States.

<b>Native American lands:</b>	According to the regulations of the Advisory Council on Historic Preservation in 36 CFR 800.2, as modified by the scope of this Draft EA, all lands under the jurisdiction or control of an Indian tribe, including all lands within the exterior boundaries of any American Indian reservation.
<b>Negotiated Agreement:</b>	An agreement between CN, IC, or both, and one or more communities or other governmental units that addresses potential environmental impacts or other issues.
<b>No-action Alternative:</b>	The proposed acquisition of IC by CN does not take place under this alternative; also, the present setting for the pre-Acquisition conditions.
<b>noise:</b>	A disturbance or annoyance of an intruding or unwanted sound. Noise impacts essentially depend on the amount and nature of the intruding sound, the amount of background sound already present before the intruding or unwanted sound occurred, and the nature of working or living activity of the people occupying the area where the sound occurs.
<b>noise contour:</b>	Line plotted on a map or drawing connecting points of equal sound levels.
<b>noise-sensitive receptor:</b>	Location where noise can interrupt ongoing activities and can result in community annoyance, especially in residential areas. The Board's environmental regulations include schools, libraries, hospitals, residences, retirement communities, and nursing homes as examples of noise-sensitive receptors.
<b>nonattainment area:</b>	An area that EPA has classified as not complying with the National Ambient Air Quality Standards promulgated under the Clean Air Act.

<b>Operating Plan:</b>	The document that CN and IC provided as part of the Application, detailing their planned railroad operations following the proposed CN/IC Acquisition.
<b>operating practices:</b>	Safety and operating rules, practices, and procedures contained in operating rule book, timetable, special instructions, or any other company-issued instructions and the management decisions implementing those rules and instructions that govern the movement of trains and work on or around active tracks.
<b>operating rules:</b>	Written rules of a railroad governing the operation of trains and the conduct of employees responsible for train operations when working on or around active tracks.
<b>particulate matter (PM):</b>	Airborne dust or aerosols.
<b>Party of Record (POR):</b>	Party that notified the Board of their active participation in the proceeding about the proposed CN/IC Acquisition. When submitting a filing to the Board, the POR must also notify the entire POR service list.
<b>passive warning devices:</b>	Traffic control devices that do not give positive notice to highway users of the approach or presence of a train. These devices may include signs and pavement markings, located at, or in advance of, railroad crossings to indicate the presence of a crossing and the presence of a train. These signs are either regulatory or nonregulatory and may include parallel track signs, crossbucks, stop signs, yield signs, and constantly flashing lights.



<b>positive train separation:</b>	Mechanism included in positive train control, an experimental, automated safety system, using Global Positioning System (GPS) technology, onboard computers and wayside information inputs to control train movement. In the event of failure on the primary safety system, positive train control reduces the risk of single-point failure (i.e., human error).
<b>posted speed:</b>	Maximum speed permitted at a specific location on the railroad network irrespective of train type.
<b>Prevention of Significant Deterioration (PSD) Class I Areas:</b>	National parks and wilderness areas designated under the Clean Air Act as areas for which users are to maintain air quality at pristine levels, with very small increases in air pollution levels allowed.
<b>Primary Application:</b>	The formal filing of documents with the Surface Transportation Board by applicants for railroad mergers, acquisitions, constructions, or abandonments. The Primary Application contains the Operating Plan and information describing related construction projects.
<b>prime farmland:</b>	According to Natural Resources Conservation Service, land having the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops.
<b>proposed CN/IC Acquisition:</b>	The proposed acquisition of IC's physical assets and operating systems by CN, for which the Applicants are seeking approval from the Board.

<b>public uses:</b>	According to 49 U.S.C. 10905 and STB Regulations "Surface Transportation Manual," Section 1105.7(3)(v), those identified alternative public purposes for the use of rail properties proposed for abandonment or discontinuance, including highways, other forms of mass transportation, conservation, energy production or transmission, or recreation.
<b>queue:</b>	A line of vehicles waiting at a highway/rail at-grade crossing for an obstruction to clear.
<b>rail line segment:</b>	For the purposes of this Draft EA, portions of rail lines that extend between two terminals or junction points.
<b>rail line switch:</b>	See <i>turnout</i> .
<b>rail route:</b>	Line of railroad track between two points on a rail system.
<b>rail yard:</b>	A location or facility with multiple tracks where rail operators switch and store rail cars.
<b>receptor:</b>	See <i>noise-sensitive receptor</i> .
<b>Request for Conditions:</b>	A document filed with the Board by a party to this proceeding on or before [Date] that requests the Board to impose one or more specified requirements on the Applicants as a condition of the Board's approval of the proposed CN/IC Acquisition.
<b>Resource Conservation and Recovery Act (RCRA):</b>	The Resource Conservation and Recovery Act of 1976 (42 U.S.C. 6901 <i>et seq.</i> ; P.L. 94-580) is a Federal act governing the generating, storing, transporting, treating, and disposing of hazardous waste.

<b>Resource Conservation and Recovery Information System (RCRIS):</b>	Federal database containing information on facilities that generate, transport, store, treat, and/or dispose of hazardous waste.
<b>Responsive Environmental Report (RER):</b>	A report, submitted by an Inconsistent or Responsive applicant, that contains detailed environmental information regarding the activities proposed in its IR Application and complies with the requirements for environmental reports in the Board's rules at 49 CFR 1105.7(c).
<b>retarder:</b>	In railroad yards, a braking device, usually power-operated, built into a railroad track to reduce the speed of cars by means of brake-shoes which, when set in braking position, press against the sides of the lower portions of the wheels.
<b>right-hand turnout:</b>	<i>See turnout.</i>
<b>riparian:</b>	Relating to, living or located on, or having access to, the bank of a natural water course, sometimes also a lake or tidewater.
<b>riprap:</b>	A loose pile or layer of broken stones erected in water or on soft ground as a guard against erosion.
<b>route miles:</b>	Length of a railroad line, regardless of the number of tracks.
<b>safety culture:</b>	The manner in which management and employees in an organization view and approach the issue of safety, including both formalized rules and informal practices in the organization.

<b>Safety Integration Plan:</b>	Plan that the Applicants prepared and submitted to the Board to explain how they propose to provide for the safe integration of their separate corporate cultures and operating systems, if the Board approves the proposed CN/IC Acquisition.
<b>seamless corridor:</b>	A railroad route that does not require cars or blocks of cars to interchange.
<b>sensitive receptor:</b>	See <i>noise-sensitive receptor</i> .
<b>separated grade crossing:</b>	The site where a local street or highway crosses railroad tracks at a different level or elevation, either as an overpass or as an underpass.
<b>service:</b>	The official notification and delivery of Board decisions and notices (including environmental documents) by the Secretary of the Board to persons involved in a particular proceeding.
<b>Settlement Agreement:</b>	An agreement negotiated between CN or IC, or both, and one or more parties, including other railroads, that addresses concerns or requests of the party (or parties). Generally, such an agreement addresses competitive customer service or labor issues.
<b>siding:</b>	A track parallel to a main track that is connected to the main track at each end. A siding is used for the passing and/or storage of trains.
<b>single-line service:</b>	Service over one railroad, without having to interchange rail cars between railroads.

<b>Sound Exposure Level (SEL):</b>	For a transient noise event such as a passing train, equivalent to the maximum A-weighted sound level that would occur if all of the noise energy associated with the event were restricted to a time period of 1 second. The SEL accounts for both the magnitude and the duration of the noise event; noise analysts use SEL to calculate the day-night average noise level.
<b>superior train:</b>	For purposes of this Draft EA, a passenger train operating on the same track network with freight trains. Superior trains must have track clear of all trains not less than 15 minutes prior to their arrival.
<b>switch:</b>	The portion of the track structure used to direct cars and locomotives from one track to another.
<b>switching:</b>	The activity of moving cars from one track to another in a yard or where tracks go into a railroad customer's facility.
<b>tank car:</b>	A type of freight car that shippers use to ship liquids and liquefied gases in bulk.
<b>threshold for environmental analysis:</b>	A level of proposed change in railroad activities that determines the need for SEA's environmental review. In conducting its environmental analysis for the proposed CN/IC Acquisition, SEA first applied the Board's thresholds for environmental analysis at 49 CFR Part 1105. The Board thresholds apply specifically to air quality and noise. For issue areas where the Board does not have specific thresholds for environmental analysis, SEA assessed whether it would be appropriate to apply thresholds developed for the recent Conrail Acquisition. SEA concluded that the analysis thresholds developed for the Conrail Acquisition were also appropriate for environmental analysis of the proposed CN/IC Acquisition.

<b>ton-mile:</b>	The movement of one ton of cargo or equipment over a distance of 1 mile.
<b>track class:</b>	Designation between 1 and 6 by the Federal Railroad Administration to characterize the quality and condition of track. The track geometry and type of track structure govern the allowable speed over the track and the level of upkeep to maintain the track. For Class 3 track the maximum allowable operating speed is 40 mph for freight trains and 60 mph for passenger trains. For Class 4 track the maximum allowable operating speed is 60 mph for freight trains and 80 mph for passenger trains.
<b>train-mile:</b>	The movement of one train over a distance of 1 mile.
<b>truck-mile:</b>	The movement of one truck over a distance of 1 mile.
<b>turnout:</b>	The portion of railroad track structure where a single track divides into two tracks.
<b>Verified Statement:</b>	A party's sworn statement that provides information to the Board.
<b>wayside:</b>	Adjacent to the railroad track, as in "wayside signals" or "wayside defect detectors."
<b>wayside noise:</b>	Train noise adjacent to the right-of-way that comes from sources other than the horn, such as engine noise, exhaust noise, and noise from steel train wheels rolling on steel rails.

**wetlands:**

According to 40 CFR Part 230.41, those "areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions," generally including swamps, marshes, bogs, and similar areas.

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## LIST OF ACRONYMS AND ABBREVIATIONS

<b>AAR</b>	Association of American Railroads
<b>ACHP</b>	Advisory Council on Historic Preservation
<b>ADT</b>	average daily traffic
<b>AST</b>	aboveground storage tank
<b>BIA</b>	Bureau of Indian Affairs
<b>BNSF</b>	Burlington Northern Santa Fe Railway Company
<b>Board</b>	Surface Transportation Board
<b>BRC</b>	Belt Railway Company of Chicago
<b>CAA</b>	Clean Air Act of 1970
<b>CAAA</b>	Clean Air Act Amendments (1977)
<b>CARES</b>	CN Accident Reporting and Evaluation System
<b>CATS</b>	Crew Assignment and Timekeeping System
<b>CCP</b>	Chicago, Central & Pacific Railroad Company
<b>CEQ</b>	Council on Environmental Quality
<b>CERCLA</b>	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
<b>CERCLIS</b>	Comprehensive Environmental Response, Compensation, and Liability Information System
<b>CFR</b>	Code of Federal Regulations
<b>CN</b>	Canadian National Railway Company (and subsidiaries)
<b>CO</b>	carbon monoxide
<b>CPR</b>	cardiopulmonary resuscitation
<b>dB</b>	decibel
<b>dBA</b>	A-weighted decibel
<b>DOT</b>	U.S. Department of Transportation
<b>DWP</b>	Duluth, Winnipeg and Pacific Railway Company
<b>EA</b>	Environmental Assessment
<b>EDR</b>	Environmental Data Resources, Inc.
<b>EJ&amp;E</b>	Elgin, Joliet & Eastern Railway Company
<b>EPA</b>	U.S. Environmental Protection Agency
<b>ERNS</b>	Emergency Response Notification System
<b>ERS</b>	Environmental Resource Score
<b>ESA</b>	Environmental Site Assessment
<b>FEMA</b>	Federal Emergency Management Agency
<b>FMEA</b>	Failure Mode and Effects Analysis
<b>FRA</b>	Federal Railroad Administration
<b>FWS</b>	U.S. Fish and Wildlife Service
<b>GIS</b>	Geographic Information System

<b>GTM</b>	gross ton-miles
<b>GTW</b>	Grand Trunk Western Railroad
<b>HC</b>	hydrocarbon
<b>HMIRS</b>	Hazardous Materials Incident Reporting System
<b>IC</b>	Illinois Central Corporation (and subsidiaries)
<b>ICC</b>	Interstate Commerce Commission
<b>ICP</b>	Internal Control Plan
<b>IDNR</b>	Illinois Department of Natural Resources
<b>IEPA</b>	Illinois Environmental Protection Agency
<b>IR</b>	Inconsistent and Responsive [Application]
<b>KCSR</b>	The Kansas City Southern Railway Company
<b>LCS</b>	Locomotive Control System
<b>L<sub>dn</sub></b>	day-night equivalent sound level
<b>L<sub>max</sub></b>	maximum sound level
<b>L<sub>max-ref</sub></b>	L <sub>max</sub> under specific set of reference conditions
<b>LOS</b>	level of service
<b>LUST</b>	leaking underground storage tank
<b>MDEQ</b>	Mississippi Department of Environmental Quality
<b>MDWFP</b>	Mississippi Department of Wildlife, Fisheries, and Parks
<b>MOU</b>	Memorandum of Understanding
<b>MRS</b>	Multiple Resource Score
<b>NAAQS</b>	National Ambient Air Quality Standards
<b>NEPA</b>	National Environmental Policy Act of 1969
<b>NFRAP</b>	No Further Remedial Action Planned
<b>NHPA</b>	National Historic Preservation Act of 1966
<b>NHTSA</b>	National Highway Transportation Safety Administration
<b>NO<sub>2</sub></b>	nitrogen dioxide
<b>NO<sub>x</sub></b>	nitrogen oxides
<b>NPDES</b>	National Pollutant Discharge Elimination System
<b>NPL</b>	National Priorities List
<b>NRCS</b>	Natural Resources Conservation Service
<b>NRHP</b>	National Register of Historic Places
<b>NSR</b>	New Source Review
<b>NTSB</b>	National Transportation Safety Board
<b>NWI</b>	National Wetlands Inventory
<b>OSHA</b>	U.S. Occupational Safety and Health Administration
<b>O<sub>3</sub></b>	ozone
<b>OTR</b>	over-the-road
<b>P&amp;I</b>	Paducah & Illinois Railroad
<b>Pb</b>	lead
<b>PDEA</b>	Preliminary Draft Environmental Assessment
<b>PIRS</b>	Police Incident Reporting System
<b>P.L.</b>	Public Law
<b>PM<sub>10</sub></b>	particulate matter less than 10 microns in diameter
<b>PM<sub>2.5</sub></b>	particulate matter less than 2.5 microns in diameter

<b>POR</b>	Party of Record
<b>PSA</b>	public service announcement
<b>PSD</b>	Prevention of Significant Deterioration
<b>PTC</b>	Positive Train Control
<b>RCRA</b>	Resource Conservation and Recovery Act
<b>RCRIS</b>	Resource Conservation and Recovery Information System
<b>RER</b>	Responsive Environmental Report
<b>RTMS</b>	Rail Traffic Management System
<b>SACP</b>	Safety Assurance and Compliance Program
<b>SEA</b>	Section of Environmental Analysis
<b>SEL</b>	sound exposure level
<b>SHPO</b>	State Historic Preservation Office
<b>SHWS</b>	State Hazardous Waste Sites
<b>SO<sub>2</sub></b>	sulfur dioxide
<b>SRS</b>	Service Reliability System
<b>STCC</b>	Standard Commodity Classification Code
<b>TCS</b>	Traffic Control System
<b>TIBS</b>	Train Information and Braking System
<b>TransCAER®</b>	Transportation Community Awareness and Emergency Response
<b>U.S.C.</b>	United States Code
<b>USGS</b>	U. S. Geological Survey
<b>UST</b>	underground storage tank
<b>VOC</b>	volatile organic compound
<b>WC</b>	Wisconsin Central Limited
<b>Y2K</b>	Year 2000

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### APPLICABLE LEGISLATIVE CITATIONS

The United States Code (U.S.C.) contains the text of current Public Laws that Congress has enacted; it does not include regulations that executive branch agencies have issued, nor does it contain treaties or decisions of the Federal courts. The Code of Federal Regulations (CFR) contains Federal regulations issued by executive branch agencies; the *Federal Register* contains proposed regulations and recently adopted regulations that are not yet included in the CFR.

SEA referred to numerous acts, regulations, and guidelines throughout its preparation of the Draft EA. The following list contains applicable Acts of Congress identified by the appropriate U.S.C., Public Law (P.L.), and/or Statute (Stat.) information. This list also contains applicable Federal regulations from the CFR and recent regulations published in the *Federal Register* and identified by the applicable issuing agency name.

#### Applicable Acts of Congress

- American Indian Religious Freedom Act of 1978* [as amended]. 42 U.S.C. 1996 *et seq.*; P.L. 95-41 (August 11, 1978).
- Antiquities Act of 1906* (also known as "American Antiquities Preservation Act"). 16 U.S.C. 31-433; P.L. 59-209 (June 8, 1906).
- Archaeological and Historic Preservation Act of 1960* [as amended]. 16 U.S.C. 469-469c; P.L. 86-532 (June 27, 1960).
- Archaeological Resources Protection Act of 1979* [as amended]. 16 U.S.C. 470 *et seq.*; P.L. 96-95 (October 31, 1979).
- Clean Air Act* (also known as "Air Pollution Prevention and Control Act") [as amended]. 42 U.S.C. 7401-7671g; P.L. 360 (July 14, 1955).
- Clean Water Act* (also known as "Federal Water Pollution Control Act") [as amended and reauthorized]. 33 U.S.C. 1251 *et seq.*; P.L. 758 (June 30, 1948).
- Coastal Zone Management Act of 1972* [as amended and reauthorized]. 16 U.S.C. 1451-1464; P.L. 92-583 (October 27, 1972).
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- Flood Control Act of 1944*. 16 U.S.C. 460d *et seq.*, 33 U.S.C. 701 *et seq.*; P.L. 665 (December 22, 1944).
- Food, Agriculture, Conservation, and Trade Act of 1990*. 7 U.S.C. 5622; P.L. 101-624 (November 28, 1990).
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- Hazardous Materials Transportation Act*. 49 U.S.C. 1801-1819; P.L. 93-633 (January 3, 1975).
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- Historical and Archaeological Data-Preservation Act* (also known as "Preservation of Historic and Archaeological Data") [as amended]. 16 U.S.C. 469 *et seq.*; P.L. 93-291 (May 24, 1974).
- Indian Self-Determination and Education Assistance Act of 1975* [as amended]. 25 U.S.C. 450-458; P.L. 93-638 (January 4, 1975).
- Intermodal Surface Transportation Efficiency Act of 1991* [as amended]. 105 Stat. 1914; P.L. 102-240 (December 18, 1991).
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- U.S. Department of the Interior, National Park Service. "National Register of Historic Places." 36 CFR 60.
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- , Research and Special Programs Administration. "Subtitle B—Other Regulations Relating to Transportation." 49 CFR Parts 170-185.
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- , "National Primary and Secondary Ambient Air Quality Standards." 40 CFR Part 50.
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- U.S. Environmental Protection Agency. "Emission Standards for Locomotives and Locomotive Engines, Final Rule." *Federal Register*, Volume 63, Number 73, p. 18977 *et seq.* (April 16, 1998).
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- , "EPA General Conformity." *Federal Register*, Volume 58, Number 228, Part 51 (November 30, 1993).
- , "EPA New Source Review." *Federal Register*, Volume 43, p. 26403.
- , "Protection of Wetlands." *Federal Register*, Volume 42, p. 26961, May 1977.
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